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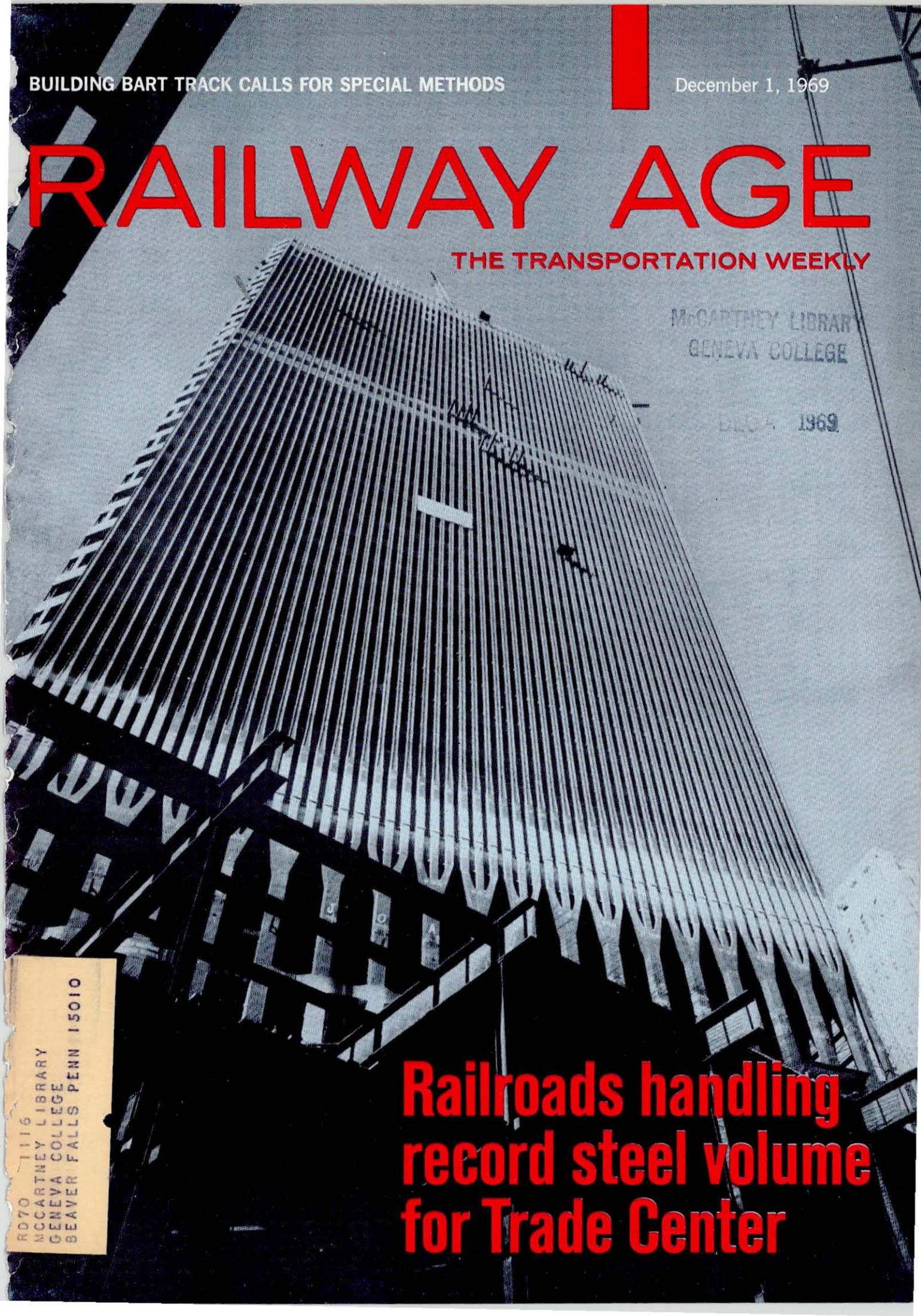

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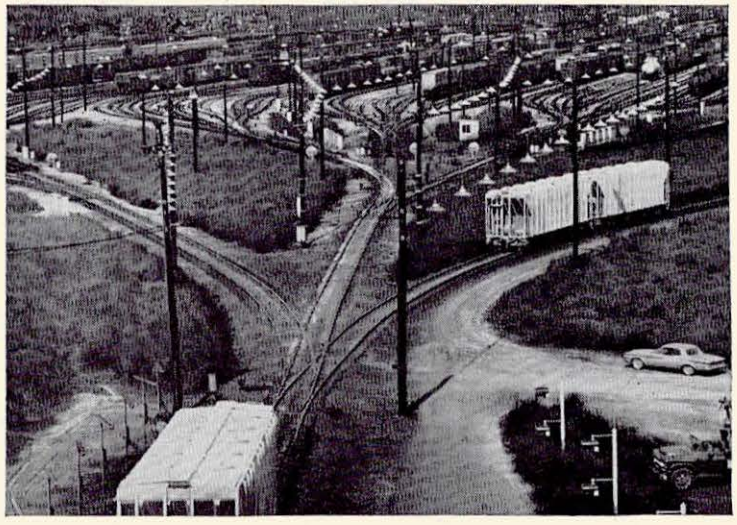

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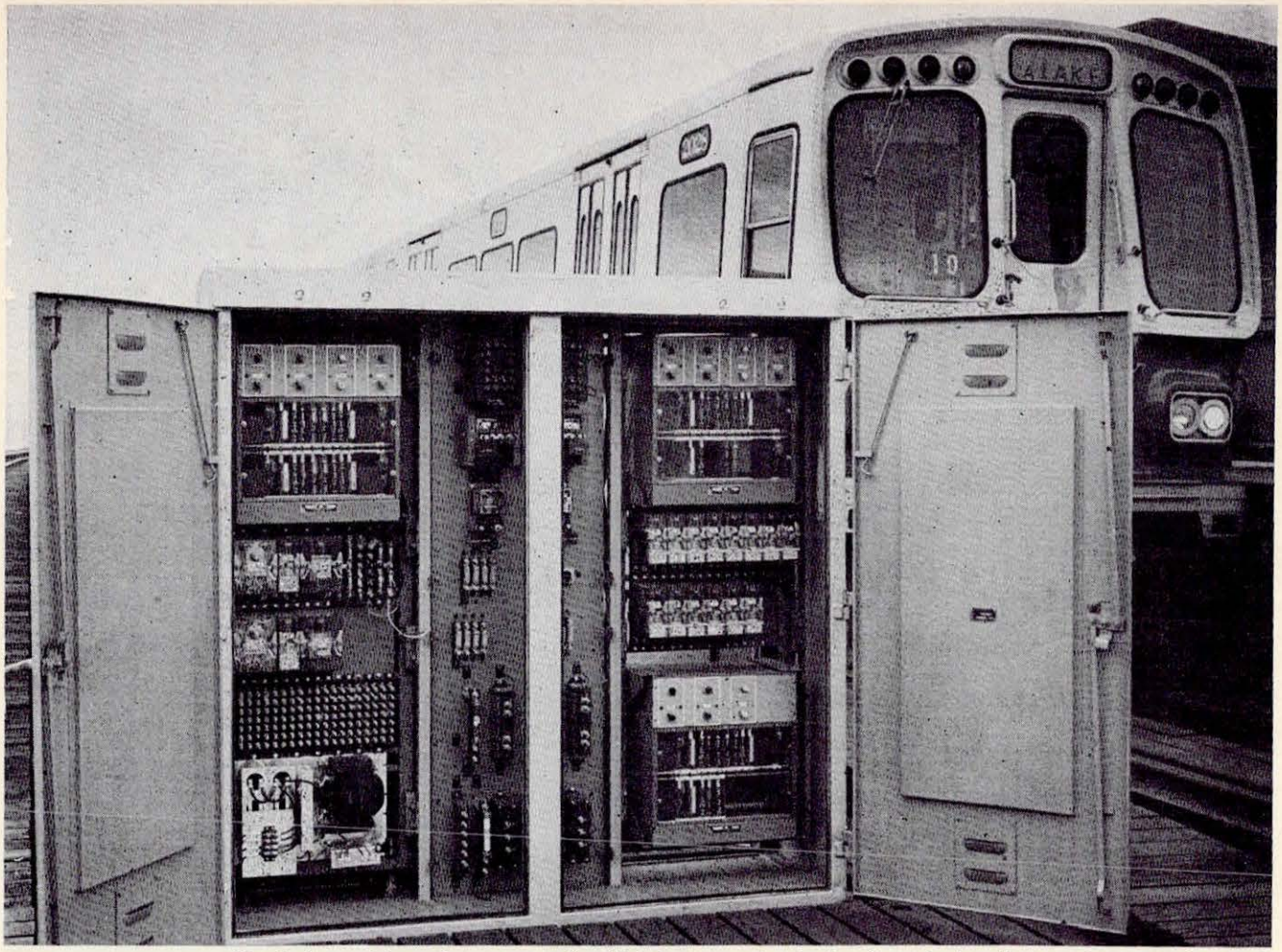

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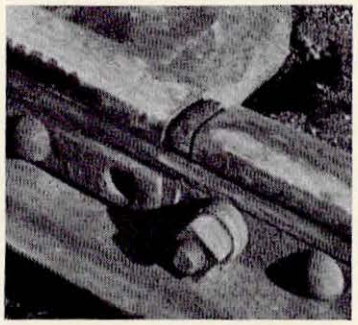

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RAILWAY AGE

December 1, 1969 • Vol. 167, No. 21

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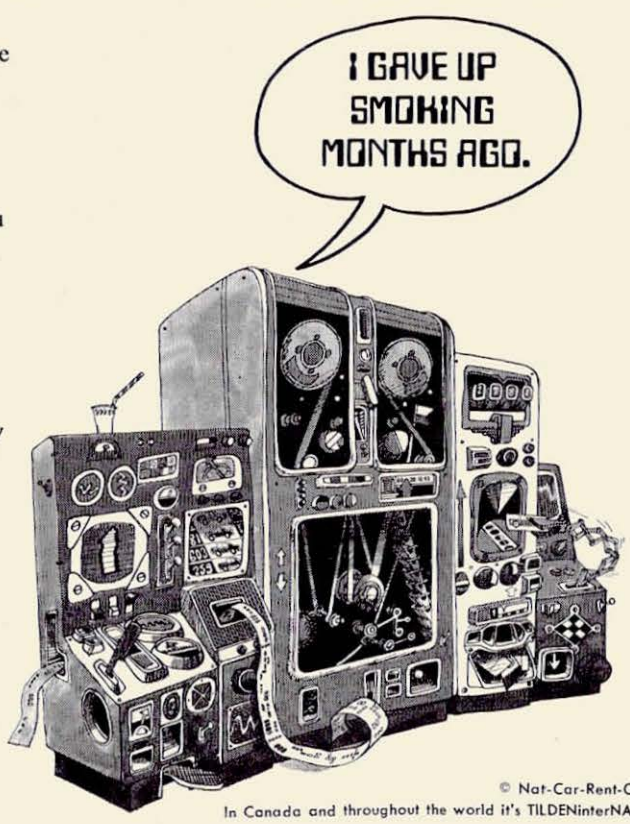

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SHORT AND SIGNIFICANT

Metroliners to increase to 18 trains daily

As Penn Central's Metroliners continue to pack them in, PC has announced yet another increase in service—from 12 to 18 trains a day, starting Dec. 14. PC increased Metroliner service Oct. 26 from six trains daily to 12. In the 12-day period before that increase, the Metroliners carried 20,920 passengers. In the 12 days immediately following the increase, Metroliner patronage soared to 35,955 and increased another 12.8%—to 40,577—within the next 12 days.

DOT proposes hot line for hazardous wrecks

An immediate phone report from a carrier to the Transportation Department after a serious incident involving hazardous materials has been proposed by DOT and now is under consideration as a possible rule. Also considered is formation of a uniform intermodal reporting system for hazardous cases. The need for such measures is made clear by the Transportation Safety Board's review or hazardous accidents, says John A. Volpe, DOT secretary. In its phone call, a carrier would have to report everything needed by DOT to determine what action should be taken immediately.

BART test-track laboratory cars will run again

Bay Area Rapid Transit District's two laboratory cars will be back in service next spring—to accelerate tune-up of BART's automatic train control system. Westinghouse Electric, holder of a $26-million contract for the control system, will conduct the test runs under a contract addition approved by BART directors. Tests will be operated over tracks now in place, linking Oakland with the present southern terminal near Union City.

AAR's Morris assumes role as DOT liaison

Unofficially but in earnest, AAR is seeking to improve its relations with the Transportation Department. An AAR spokesman confirmed last week that I. Sewell Morris (Ret. Brig. Gen., USA), AAR vice president—assistant to the president, has assumed the function of AAR contact man with the Department. "We feel that we should have a better liaison with DOT than we have had, and that we should concentrate this in a primary contact, as we do with other agencies," the AAR spokesman said.

SP gets okay for $9.9-million equipment paper

The ICC last week authorized Southern Pacific to issue equipment trust certificates totalling $9.9 million in value to help acquire two 3,300-h.p., six-axle, six-motor diesel locomotives; 322 70-ton, 50-foot-six-inch box cars; 290 70-ton, 50-foot-six-inch insulated box cars; and 10 100-ton 86-foot hi-cube box cars. The equipment-trust certificates would cover 80% of the total cost, $12.5 million. The balance would be covered in advance by cash.

Senate Commerce Committee okays service-hours cut

The Senate Commerce Committee last week approved a railroad hours-of-service-reduction bill and was in the process of drafting a report to accompany the bill to the Senate floor where it would await a final vote. The bill would reduce from 16 hours to 12 the maximum time a rail worker could be kept on the job within any one 24-hour period. The Senate measure is basically the same as one approved by the House (RA, Nov. 10, p. 25.). In other rail-related action last week, the Committee postponed a decision on a railroad safety bill. The postponement was requested by the Transportation Secretary, who wants time to iron out disagreement between DOT and State representatives over DOT's proposed repeal of state laws affecting rail safety. Also the Committee set Dec. 2 as the next date for considering a proposed passenger-train bill that would provide $250 million over the next five years to meet two-thirds of rail avoidable passenger costs and $915 million over the next four years for an equipment fund to finance purchase and rehabilitation of cars.

MONDAY MORNING REPORT

DOLLARS DISAPPEAR FOR FRA

Late last week indications were that Congress would grant the Federal Railroad Administration $15.4 million for fiscal 1970. That would be $4.9 million less than FRA asked for—and $3.2 million less than FRA got for fiscal 1969. That amounts to a 17% *decrease* from last year—while the Transportation Department generally would get an 18% *increase*. FRA was planning a last-minute appeal to the Senate appropriations committee.

UMTA COMES OFF A LITTLE BETTER

Elsewhere in DOT the picture for fiscal 1970 is better. The Urban Mass Transportation Administration would get a 27% increase over fiscal 1969. UMTA would get $221.5 million. That's about $46.5 million more than in fiscal 1969, but $30.5 million less than UMTA requested. The Secretary's office would get a 49% increase. The Secretary would get $24 million, compared with $16.1 million last year. The Aviation Administration would get 28% more money. The Highway Administration budget would go up 16%. And the Coast Guard would get a minor 0.5% cut in funds.

ICC WINS SMALL INCREASE

In addition to the DOT offices, there are four related agencies that come under the transportation appropriations. First, so far as rails are concerned, is the Interstate Commerce Commission, which would get a small increase of $336,000, for a total of $25 million in fiscal 1970. ICC got $24.7 million in fiscal 1969, and asked $25.5 million for fiscal 1970. However, ICC's aviation counterpart, the Civil Aeronautics Board, would get a big cut of $11.1 million. CAB in fiscal 1969 got $54.8 million. It would get $43.7 million in fiscal 1970. It asked for $45 million. The National Transportation Safety Board would get a slight increase of $202,000, or a total of $5 million, compared with $4.8 million in fiscal 1969, and its request of $5.1 million. Finally, the Washington Metropolitan Area Transit Authority would get $43.1 million, compared with $43.7 million in fiscal 1969.

FRA SHARE IS MICROSCOPIC

The relative-agency money, plus miscellaneous debt-reduction appropriation, plus the DOT office funds would bring the grand total for fiscal 1970 transportation appropriations to $6.6 billion. The appropriation for fiscal 1969 was $6 billion. Of the total appropriation for the six DOT offices, FRA's portion would amount to 7.5%. Of the total transportation appropriation for fiscal 1970, FRA's share would amount to a little more than two-tenths of 1%.

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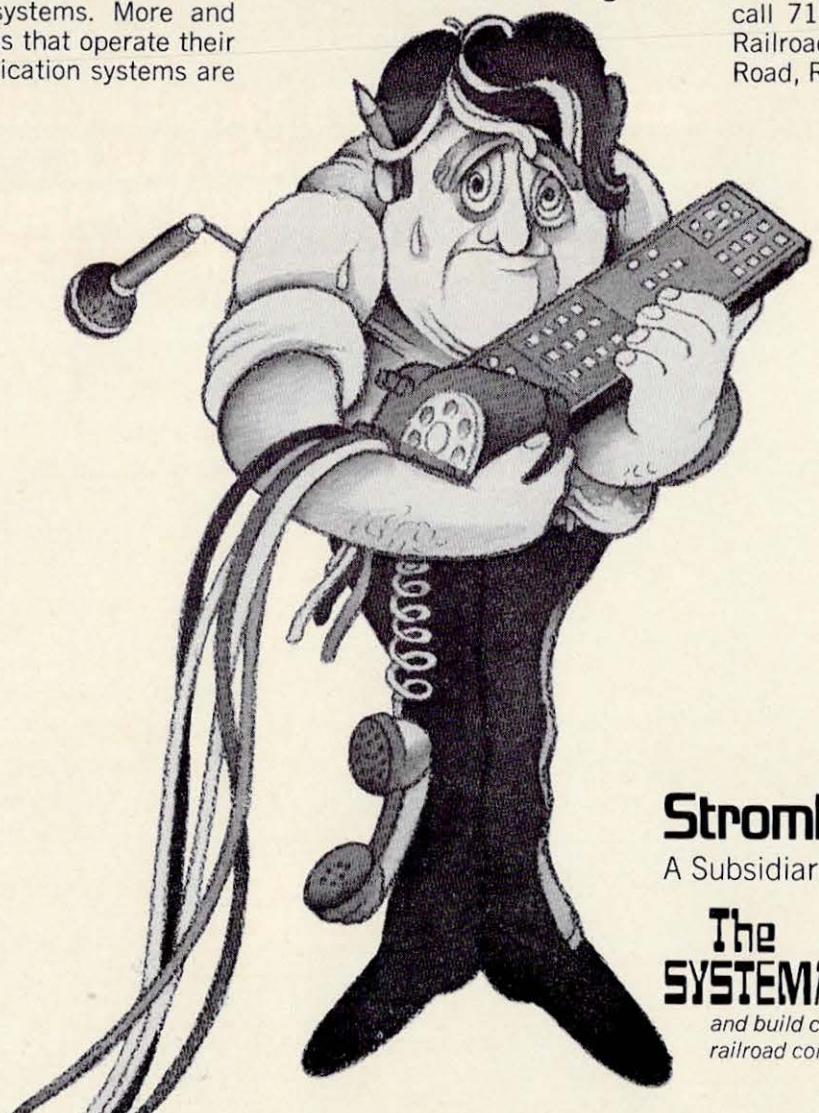

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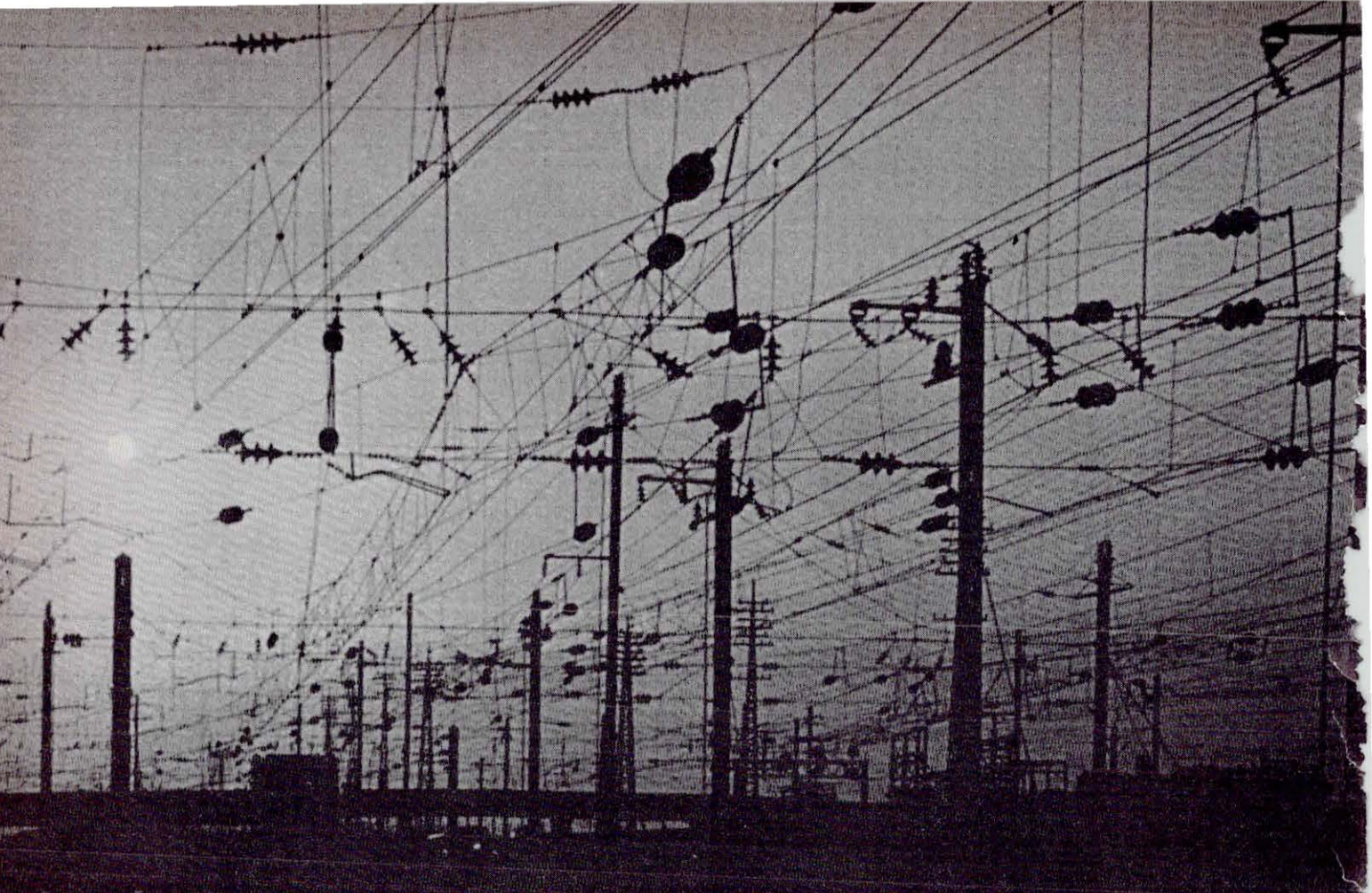

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WEEK AT A GLANCE

IC, Rock Island, Southern, PC win RPI awards

The Railway Progress Institute's 1969 awards for freight-traffic promotion have been won by the Illinois Central, the Southern and the Rock Island. A special award for Outstanding Achievement in Railroading went jointly to the Penn Central and the Department of Transportation (RA, Nov. 17, p. 7).

IC, winning the Golden Freight Car for the second consecutive year, was cited for its Rent-A-Train program. IC's Golden Freight Car was accompanied by individual plaques for Chairman William B. Johnson; President Alan S. Boyd; John W. Ingram, vice president marketing; Edward G. Kreyling, Jr., vice president-traffic; John D. Mitros, public relations manager; and J. H. Butridge, general manager freight sales.

Rock Island's Silver Freight Car (for a new export grain marketing plan) was accompanied by plaques for Chairman/President Jervis Langdon, Jr.; Albert F. Hatcher, vice president-traffic; J. Ted Wells, marketing manager-grain and grain products; Martin L. Cassell, general solicitor; Norman L. Schultz, manager-pricing; and James G. Pate, director of public relations.

Along with Southern's Silver Freight Car (for that railroad's "Green Light" advertising-marketing-sales promotion program) went plaques for President W. Graham Claytor, Jr.; William F. Geeslin, assistant to the president; William H. Moore, vice president-operations; L. Stanley Crane, vice president-engineering and research; James S. Crow, vice president-finance; and William D. McLean, vice president-purchasing and real estate.

The special award, for development of the "Metroliner" high-speed service between New York and Washington, was accepted by Penn Central Chairman Stuart T. Saunders and Federal Railroad Administrator Reginald N. Whitman.

Retiring RPI Chairman J.W. Henderson, Jr., president of Buckeye International, presented the awards before an audience of 1,200 suppliers and railroad men during RPI's annual dinner in Chicago Nov. 20. Henderson announced the election of F.L. Bredimus, president of Dresser Transportation Equipment Division, as new chairman of the RPI, and Henry A. Correa, president of ACF Industries, as vice chairman.

50-year-old freight cars to be banned from rail interchange service

All freight cars 50 years or older, whose numbers may run as high as 32,000, will be banned from rail interchange effective Aug. 1, 1970, according to an order issued last week by the AAR Mechanical Division's General Committee. The deadline for removal of the older cars was first set as Jan. 1, 1970, but fears of many private car owners that this was too short a time to allow orderly compliance led to the decision to extend the deadline for private owners. However, railroads owning cars in this age group will still be required to observe the original deadline.

Piggyback's "slump": Why do the figures say what they do?

Since it became apparent that piggyback would have a low-level growth rate for 1969, speculation has been the order of the day. Some of it has been careless, some thoughtful. Most of the "explaining" has been less than complete in providing an assessment of piggyback's present and future. Illinois Central's intermodal sales and service people, however, have taken a close look at the situation—and they come up with these factors to explain the current "hesitation" in the growth figures:

—There has been a softening in motor-carrier tonnage, which some may overlook in considering only TOFC/COFC statistics.

—Some roads are "piggyback-saturated" in certain areas.

—The current profit-squeeze is forcing consolidation of certain piggyback train operations, and service advantages are thus being watered-down.

—Figures are suspect. Reporting "is often inaccurate and sometimes misleading." Some carriers treat empty trailers as non-revenue moves when in fact some of them are moving under a tariff. There are problems of reporting that arise when two empties move on one flat car and one of them is a free trailer and the other is not. Some containers move at carload rates rather than piggyback rates and are counted as such rather than as piggyback.

—Some railroads "are pruning their piggyback traffic. This activity may reduce the gross momentarily, but it beefs up net income."

—The statistical base is now so big that even significant surges in business do not show up spectacularly.

And IC President Alan S. Boyd's reaction to all this: "Piggyback is alive and well. In my view, it is getting set for yet another decade of vigorous growth based upon the same virtues that made piggyback a hot product in the '60s."

GUS WELTY

LINES ON LABOR

IF YOU WANT TO START A FIGHT in rail labor today, you don't have to mention "compulsory arbitration." Just drop the phrase "compulsory retirement." And then step back, quickly.

COMPULSORY RETIREMENT is one of the gut issues in the current three-way battle (railroads, rail unions and Congress) over supplemental-pension legislation. It was the wedge that split the Railway Labor Executives' Association. It is an issue full of ironies.

ONE OF THE IRONIES is that this is supposed to be the start of an Age of Leisure. Americans, we're told, will have more and more free time. The work-day will be shorter, the work-week will be shorter, vacations will be longer, holidays will be more frequent. It should follow, then, that retirement will come earlier. It should follow, maybe—but it doesn't.

SOME OPPOSITION to compulsory retirement is based, pure and simple, on the idea of compulsion—however exerted. Other opposition is less broad. It's summed up in this observation by RLEA's new chairman, C. J. Chamberlain: "We are not opposed to compulsory retirement as such. What we are opposed to is retirement's being imposed by legislation." Chamberlain's union, the Brotherhood of Railroad Signalmen, now has several retirement agreements in effect, covering employees on specific properties. If BRS members want more such agreements, he says, then BRS negotiators will try to work them out at the bargaining table. But as for the current dispute, involving legislation (passed by the House) which requires retirement at 65: "Congress has no right to invade the collective-bargaining field."

WHAT IMPACT would compulsory retirement have? Quite an impact, based on latest-available estimates of the number of rail emloyees in the over-65 age group. The figures indicate that roughly 5% of total employment qualifies as part of the 65-plus generation. More than 6,000 employees are reported in the 70-and-up bracket.

THE BIGGEST RAIL UNIONS have negotiated retirement plans. By and large, the smaller ones have not. That's part of what the present scrap is all about (aong with the issue of bargained-for vs legislated retirement). And how will the argument be resolved? That's hard to say. Congress likes neat packages in situations like this, with management and labor agreeing on a program. On labor's side, now, it will never happen.

Senate gets strengthened transit-aid bill

The Senate now has for its consideration—and probable passage—a mass transit compromise between the Administration's desire for year-by-year contracting for transit projects and the desire of certain Senate lawmakers for a longer-term commitment.

A revised Public Transportation Assistance Act now would allow $3.1 billion of a total $10 billion to be obligated at once for the first five years of a 12-year plan. However, limits would restrict the portions of that $3.1 billion that could be *spent* within each of the first five years.

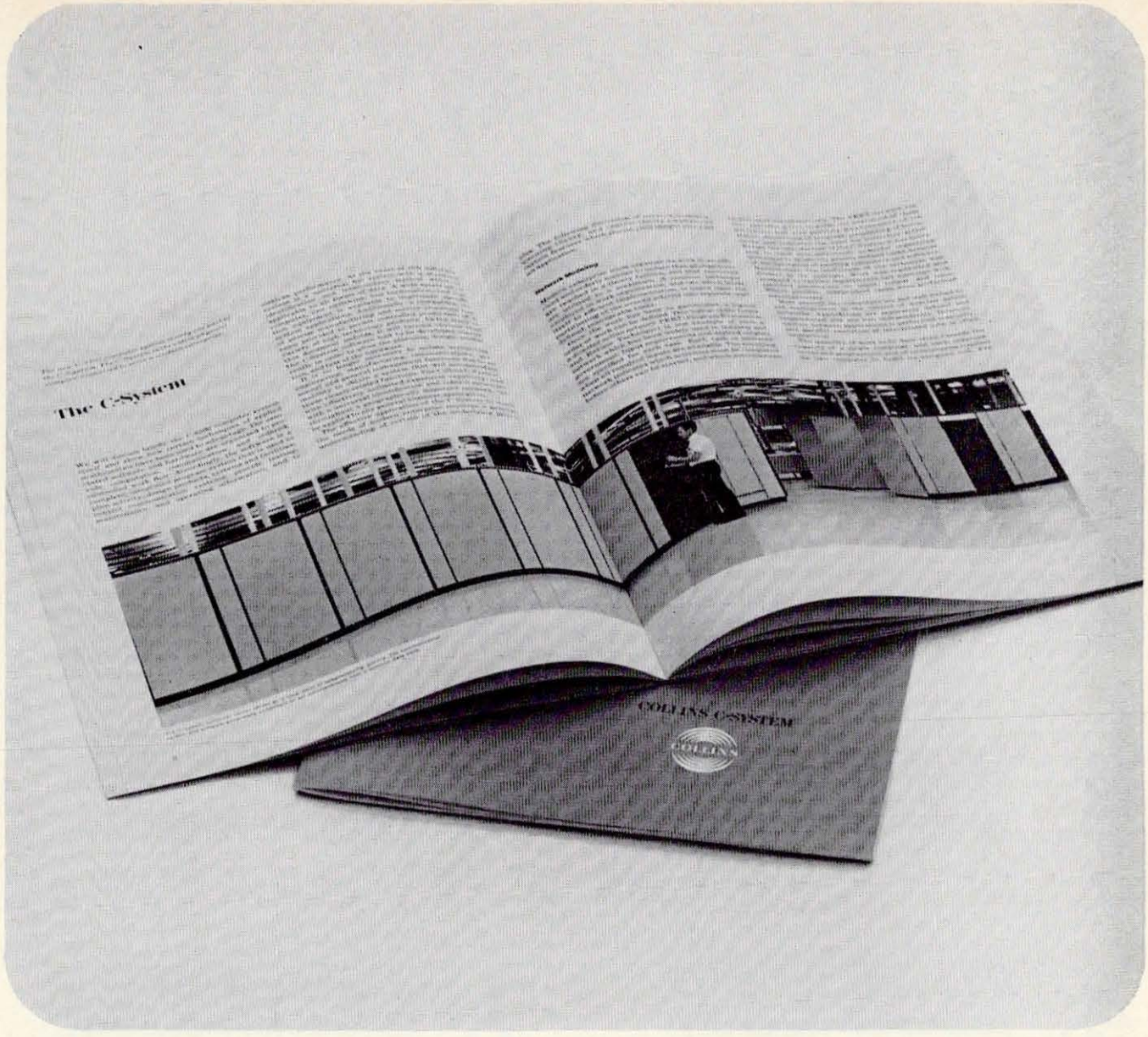
The yearly limits would work like this: in fiscal 1971 not more than $80 million could be spent; in fiscal 1972, no more than $230 million; in fiscal 1973, no more than $400 million; in fiscal 1974, no more than $550 million; and in fiscal 1975, no more than $600 million.

The small amount that could be spent in fiscal 1971 would be augmented by funds already appropriated under previous authorizations. That would mean an additional $300 million in the first year of the plan.

If you add up the amounts that could be *spent* in the first five years, you get $1.86 billion, noticeably less than the $3.1 billion to be *obligated* for that period of time. What about the remaining $1.2 billion? That would still be obligated, but it would remain unspent. There is usually an 18-month to three-year lag between the time money is committed and the time it is actually spent, according to DOT.

"While the expenditure level in the first two years might seem low in relation to the obligational authority, it is consistent with our past experience under the Urban Mass Transportation Act of 1964 . . . Through fiscal year 1970, out of a total program of $795 million, it is estimated that only $400 million will have been expended, or about 50% of the total amount obligated," John Volpe, DOT secretary says.

That figure of 50% is slightly less than the figure that would hold for the amount spent of what is obligated for the first five years of the new plan. The balance of what would be obligated, along with the remaining $7 billion will be obligated in a review to be every two years. At each review, (the first would come in 1972) the next five years would be covered, so that the five-year period of obligation would be preserved.



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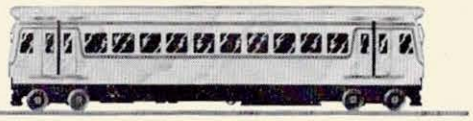
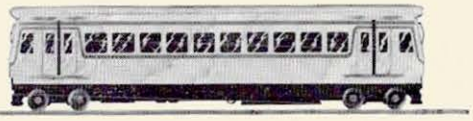
1. 

2. 

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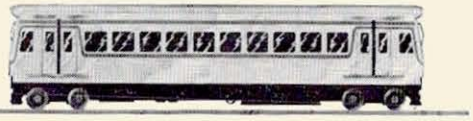
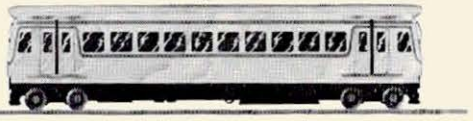
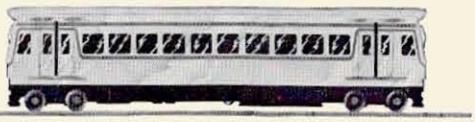
4. 

5. 

6. 

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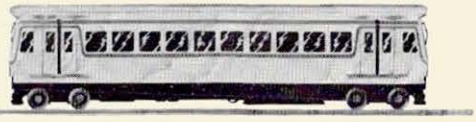
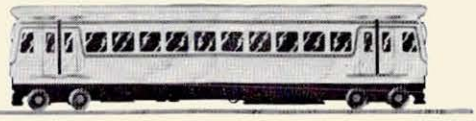
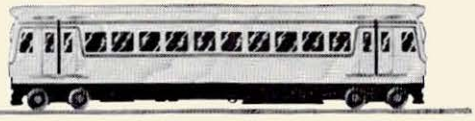
8. 

9. 

10. 

Cleveland's flyers have gotten a high-speed start for the past several months. Nickel stainless steel cars speed them from downtown to the airport in 22 minutes.

Now the Cleveland Transit System is buying ten more of these lightweight, corrosion-resistant cars from Pullman Standard.

These strong, safe cars will make it even easier and faster to get in and out of Cleveland. If your hometown's ready to fly the Cleveland way, write for our brochure, "Nickel Stainless Steel—The Modern Material for Modern Transit." The International Nickel Company, Inc., 67 Wall Street, New York, N.Y. 10005. In Canada, The International Nickel Company of Canada, Limited, P.O. Box 44, Toronto-Dominion Centre, Toronto 111, Ont.

INTERNATIONAL NICKEL

Circle 6 on coupon page 31

$56.8-million program planned for New Haven

New York's Metropolitan Transportation Authority and the Connecticut Transportation Authority announced jointly on Nov. 25 that they have agreed on a "memorandum of intent" for assumption of public control over Penn Central's New Haven commuter service. Simultaneously MTA and CTA announced a $56.8-million program for upgrading service on the line.

Under this program, MTA and CTA will provide 144 new high-speed electric cars, new high level station platforms, and other improvements for the "West End" commuter service operating between Grand Central Terminal in New York and New Haven, New Canaan, Danbury and Westbury in Connecticut. The new rolling stock will replace all existing non-air-conditioned, self-propelled and locomotive-hauled cars.

Highlights of the memorandum of intent include:

1. Purchase by MTA of the right-of-way of the main line of the former New Haven Railroad between Woodlawn Junction and the state line at Port Chester for $7.2 million. In return, MTA will grant back to Penn Central freight and passenger trackage rights to permit it to continue meeting its common-carrier obligations.

2. Lease by CTA of the Connecticut rights-of-way leading to New Haven, New Canaan, Danbury and Westbury for a term of 60 years at a rental of under $1 million per year. CTA will grant back to Penn Central the same trackage rights agreed to by MTA.

3. Lease of Grand Central Terminal and its approaches from Penn Central (through MTA) for 60 years. The rental and other conditions are intended to continue the substance of the old agreement between Penn Central and the former New Haven.

4. Joint purchase by MTA and CTA of the 97 existing air-conditioned electric passenger cars at a unit price (exclusive of rehabilitation costs) of $40,600. These cars, with the 144 new cars, would make up the modernized fleet.

5. The New Haven commuter service will be conducted under a service contract between the two authorities and Penn Central which would provide that Penn Central would operate the service at publicly set standards in consideration of the commitment of MTA and CTA to absorb operating losses on a 50-50-basis.

LUTHER MILLER

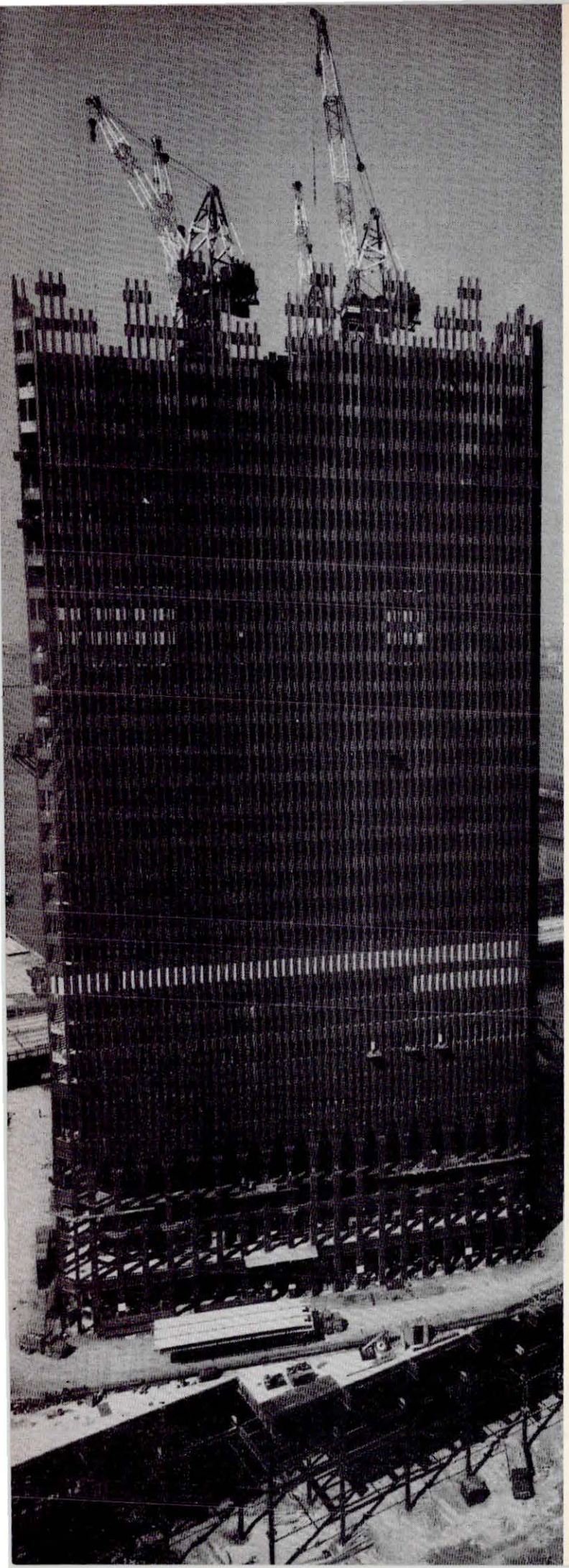
AS THE EDITOR SEES IT

"A CREPE-HANGERS' CONVENTION," one newspaperman called it. There was, to be sure, a certain amount of draping-of-the-purple during RPI's full day of meetings in Chicago Nov. 20. And what is surprising about that? There is much to mourn about in an industry that finds artificial roadblocks at nearly every bend in the track. There is no use pretending otherwise—and the railroad presidents and financial analysts who participated in RPI's panels did all too good a job describing the problems and the portents.

BUT THOSE WHO SAW ONLY GLOOM AND DOOM emerging from "RPI Day" missed the whole point. If the reporters who wrote about the early events of Nov. 20 had not met their deadlines before the climactic event—the annual dinner and prize-giving—their stories just might have been different. The discerning reporter attending this session could have got an inking of what railroading is really all about. Consider the winners of RPI's Golden and Silver Freight Car awards—and how they won.

IT TOOK NO ACT OF CONGRESS for Illinois Central to invent "Rent-A-Train." It took the imagination of a John Ingram, IC's brilliant young marketing chief, backed up by the vision of a Bill Johnson, IC's brilliant young chairman. For this innovative railroading, IC won RPI's Golden Freight Car award. It required no intervention by the White House for Rock Island to evolve a dramatic new marketing plan opening new export grain outlets. It required no Federal subsidy for the Southern to invest heavily in its "Green Light" program, a concentrated advertising-marketing-sales promotion campaign. For these efforts, Rock Island and Southern won Silver Freight Cars. Innovative railroading is not, of course, limited to these three. The other eight railroads that entered RPI's competition were all close runners-up—and we'd guess that most of the other 70-odd Class I's could also have come up with a strong entry.

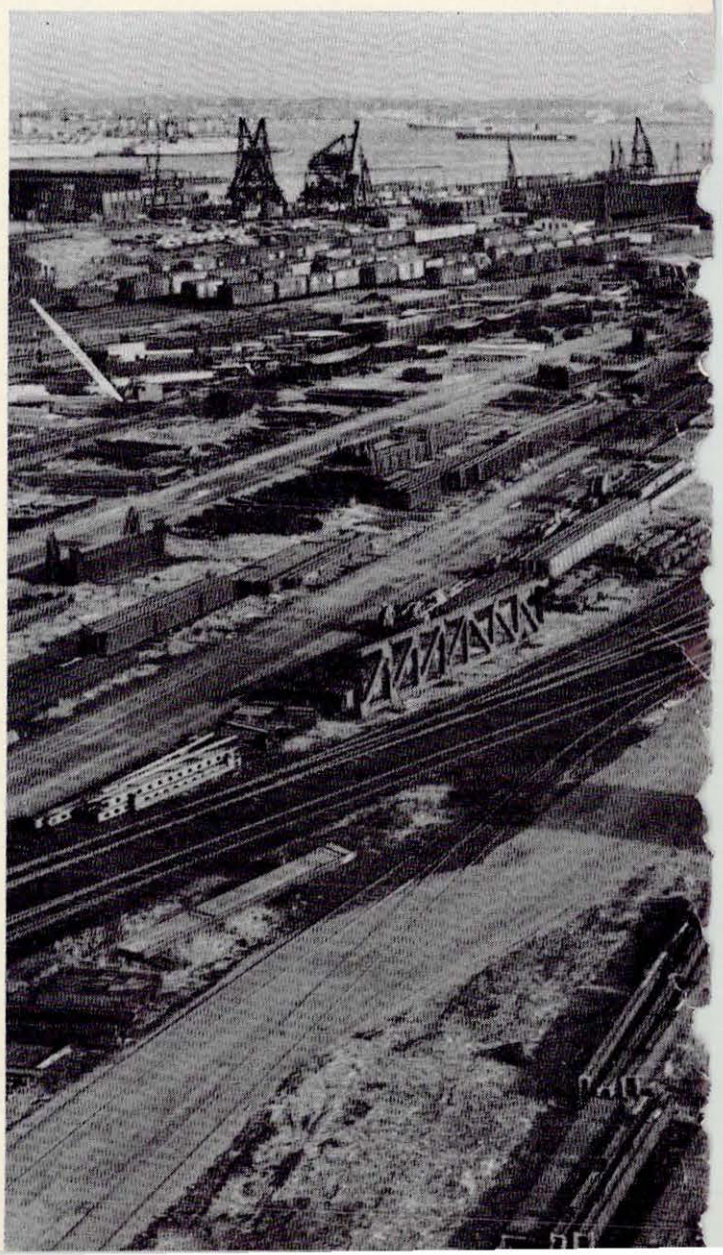
UP's FRANK BARNETT SAID IT and said it well, in an interview a few months ago with Railway Age: "*We're going to make it on our own, despite inequities.*" Yes—we need relief from government-fostered inequities—and it may take some honest crepe-hanging to get it. But we also need to remember that a real selling and service job remains to be done within the industry. And *is* being done. RPI's annual prize-giving is an excellent reminder. Let's try to see that the consumer press gets the word next year. Everybody knows what's wrong with railroads. Only railroaders seem to know what's right. It's up to them to spread the word.



History's biggest building project:

"We couldn'

With 70 more stories to go, the first tower of the World Trade Center already dominates the lower Manhattan skyline. The ability of Penn Central's Greenville yard to handle a record steel shipment is vital to success, say PA engineers



...lo it without the railroads"

Sometime next year a piece of structural steel carrying a small fir tree and an American flag will be hoisted 1,350 feet into Manhattan's sky. As a team of iron workers fits the steel into place, champagne corks will pop in celebration of the topping out of the world's tallest building—the World Trade Center.

On its way to reaching the record-shattering height of 110 stories, this first of a pair of twin towers will have broken hundreds of engineering and construction records. Not the least of these records will be the cost. The $600-million Trade Center complex will be the most expensive group of buildings ever erected as a single project.

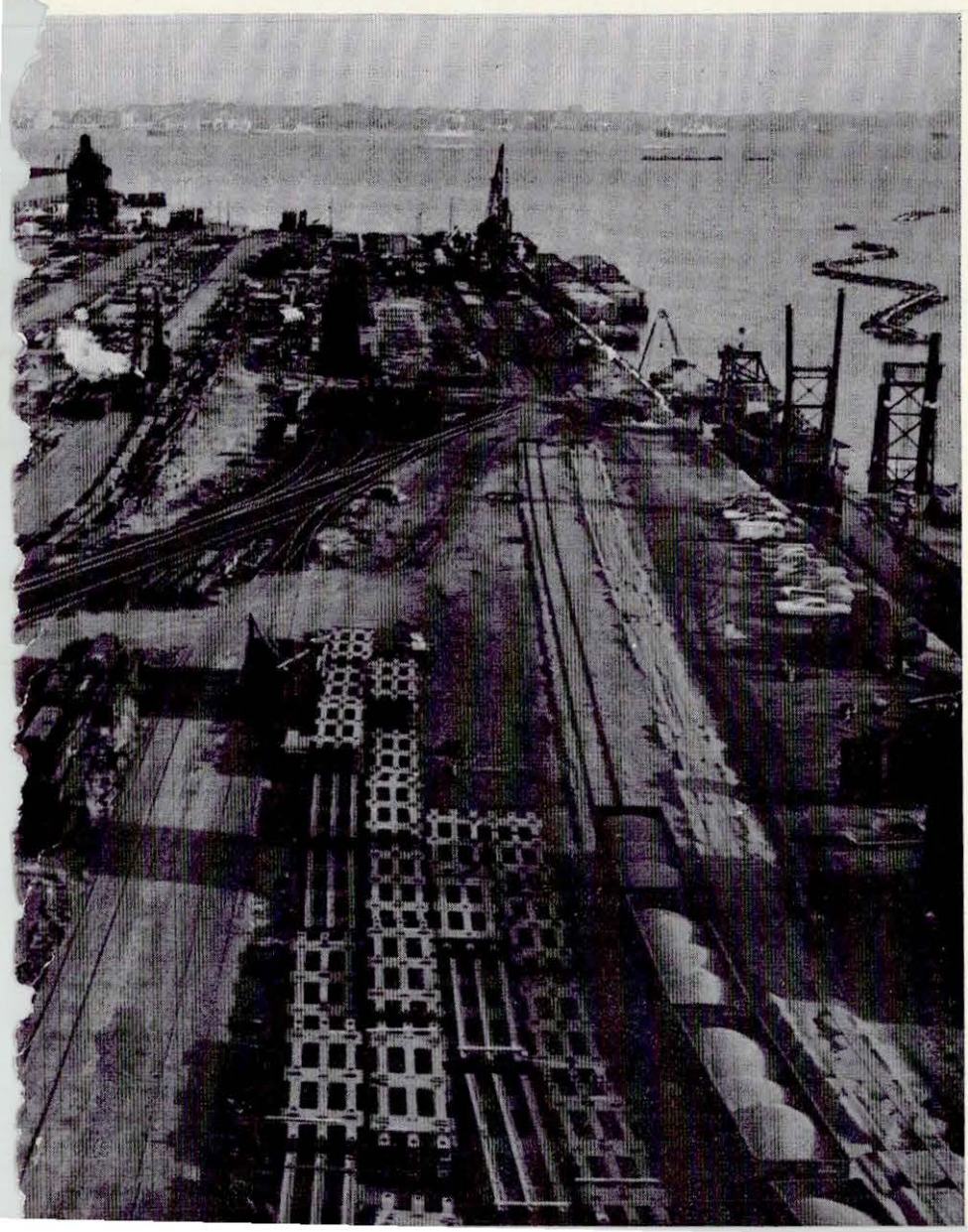
● **Railroad records, too.** And all the new records will not have been set by the builders. The nation's railroads will have set some of their own in providing logistical support for the builders.

By the time the Trade Center is completed, the railroads will have shipped some 200,000 tons of structural steel, the largest shipment of its kind ever made. Twenty-one railroads are involved in the movement. It is estimated that they will need to supply approximately 6,667 carloads of steel to do the job.

In addition to the massive steel shipment, the railroads will be carrying a large portion of the other materials used in the building. The quantities of the building materials required boggles the mind. For example, there will be enough lighting fixtures—10,000—to illuminate a highway from New York to San Francisco. The 3,000 miles of wiring going into the building should be almost enough to connect the lamps along that hypothetical highway.

There also will be 21,800 windows, 250,000 square feet of marble and travertine, and enough air conditioning equipment to cool 15,000 homes. Just the 42,000 door knobs are enough to fill three boxcars.

● **On the critical path.** Control of a project as complex as the Trade Center is obviously a problem of enormous



Railroads Shipping Steel For World Trade Center

Baltimore & Ohio
Central Railroad of New Jersey
Chicago, Burlington & Quincy
Chicago & Eastern Illinois
Denver & Rio Grande Western
Erie Lackawanna
Illinois Central
Louisville & Nashville
Missouri Pacific
New Orleans & Louisiana
Norfolk & Western
Northern Pacific
Penn Central
Pittsburgh, Chartiers & Youghiogheny
Richmond, Fredericksburg & Potomac
St. Louis Southwestern
Southern Pacific
Southern Railway System
Toronto, Hamilton & Buffalo
Union Pacific
Western Pacific

READY FOR CROSS COUNTRY shipment, three cars of fabricated steel stand on Pacific Car & Foundry's Renton, Wash., siding.

21 railroads handle structural steel from 15 fabricators

UNLOADED AT GREENVILLE, World Trade Center steel is stockpiled in the yard until just before scheduled erection time.

magnitude. The Port of New York Authority, owner of the buildings, has an engineering staff of about 100 working full time on coordinating the activities of the various contractors and expediting the flow of materials to the site.

Even this large staff would be of insufficient size were it not for the fact that the project has been computer-programmed by the Critical Path Method (CPM). CPM is a relatively new management tool particularly well suited to the building industry because it forces coordination of independent but related activities.

One of the great advantages of CPM is that it requires precise planning. Every aspect of a building project must be determined in advance—time requirements for design, procurement, shipping and installation; manpower needs and availability; expiration dates of union contracts; anticipated effects of weather; even cash flow requirements.

This raw planning data is then analyzed—by a computer in the case of the World Trade Center—and a day-by-day schedule is made. Usually, this schedule is presented graphically as a plot with hundreds of lines converging on or diverging from many foci. An experienced construction superintendent can get an instant picture of the status of the job by glancing at the chart; to the uninitiated, however, a CPM network looks like a web spun by a demented spider.

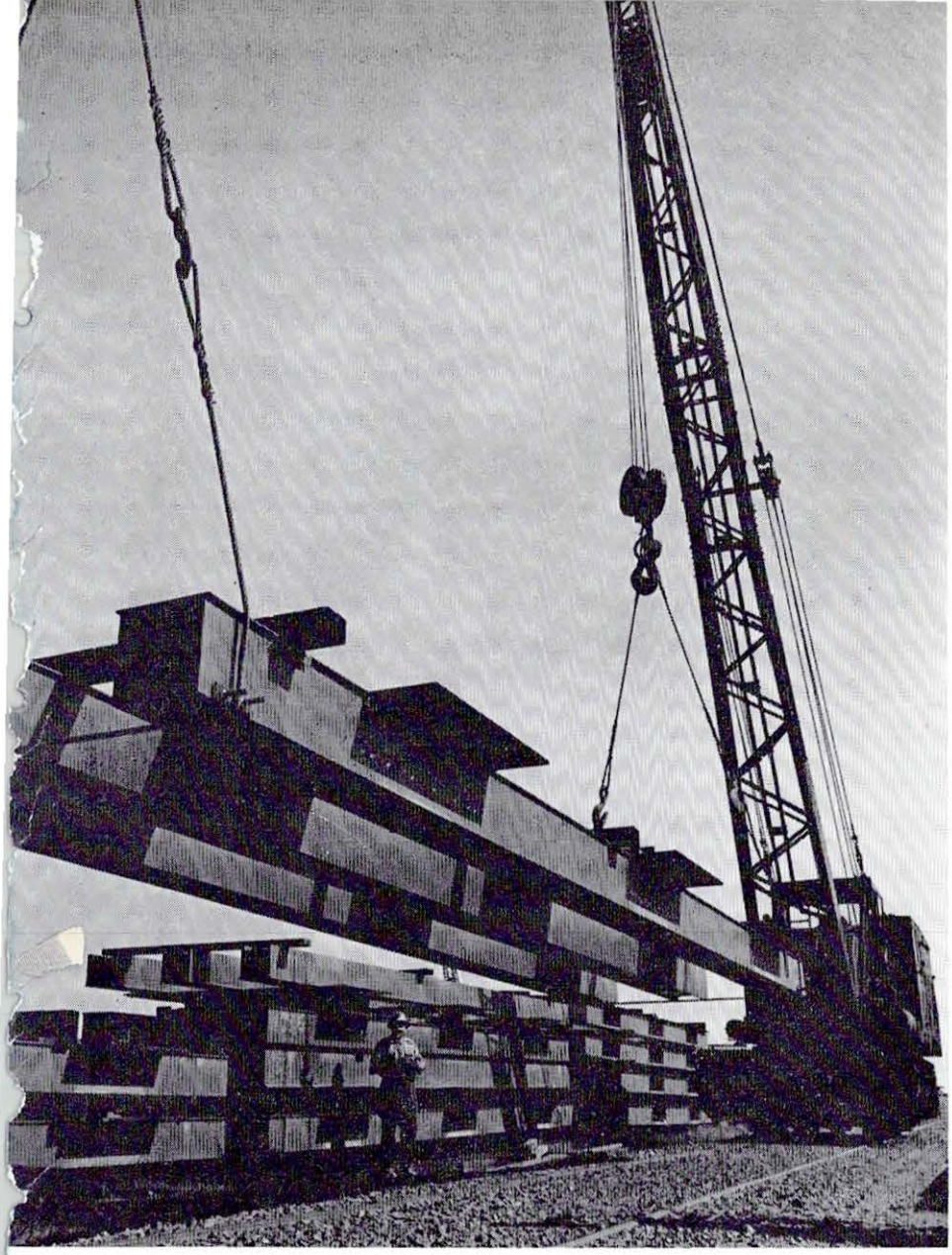
Steel on critical path

In any construction project, certain activities control the cost and completion time. These are crucial to the job and must be completed before other activities can begin or end. To use a simple example, before you can install a window, you usually must build a wall. In the organized logic of CPM, the wall building would be "on the Critical Path" in relation to the window installations. It would not necessarily be on the main Critical Path in relation to the over-all project because there could be other activities more important than wall building.

In the case of the World Trade Center, however, there is no question that wall building—the erection of the structural steel—is on the Critical Path and will remain there until the second tower is framed. Little else can be done unless the walls are installed first.

● **"Live in horror."** Steel work is, in fact, so critical to the success of the project that Ray Monti, Port of New York Authority's chief engineer for the Trade Center, says, "I live in horror of the day when a key piece of steel doesn't arrive on time—or arrives and doesn't fit."

Monti has cause to worry. The structural requirements of the twin towers are so great that the Port Authority has had to spread fabrication contracts among 15 suppliers, including two on



the Pacific Coast. The specified tolerance for any of the 200,000 structural pieces is only ⅛ in., which is considered tight in the steel industry. Compounding the fabricators' difficulties is the fact that many grades, or strengths, of steel are used in the frame. Thus, a fabricator may be required to supply many pieces with exactly identical dimensions but with entirely different strength characteristics.

The fabricators' answer to this challenge tends to add to the logistics headaches. To maintain a semblance of order in his production, a fabricator often tries to work with one grade of steel at a time. For example, if his contract calls for a certain number of pieces of A36 steel and a number of pieces of A441, he may finish most of the A36 work first, even though some of the steel will not be needed for two years.

Because suppliers for the World Trade Center get paid on delivery rather than on installation (a unique wrinkle in Trade Center contract), it behooves them to ship a piece the minute it is finished.

This practice results in a stockpiling problem which, in the end, becomes a railroad's problem, namely Penn Central's.

● **100 acres of steel.** As the terminating railroad for the steel carried by the 21 lines involved, Penn central must store all structural steel until a few hours before it is scheduled for erection.

To do this, PC has set aside 100 acres in its Greenville Piers yard in Jersey City, about 10 miles from the construction site. Here it receives 8 to 10 carloads of steel a day. And from there it dispatches by truck a similar amount, attempting to time delivery at the site so that most trucks arrive under the designated crane within 30 minutes of scheduled erection time. This is not an easy task.

The toughest job may be that assigned to Penn Truck Lines, the PC subsidiary responsible for moving the steel from Greenville to the construction site. It often has more than 65 trucks working on a single day—many times at odd hours.

For example, most pieces leaving Greenville cross under the Hudson River through the Holland Tunnel, a fairly direct and uncomplicated route. Oversize pieces, however, must go through the Lincoln Tunnel between 3:00 and 5:30 a.m. The trucker must then find some place on Manhattan to stay until installation time, which cannot be earlier than 8:00 a.m.

Getting some of the steel to Greenville is a pure railroading problem. There are several panels fabricated to 11½-ft widths that have to be shipped flat to prevent warpage. As with any BX shipment, the cars carrying these oversized panels have to be babied across the country.

Most of the steel, fortunately, can be handled as ordinary freight. Those pieces that do not originate in Penn Central's own territory are picked up at the line's Chicago and St. Louis gateways or the Potomac Yard in Washington. Normal flat cars are used for most shipments, with a few 65-foot gondolas being used for larger girders.

The important thing is that the steel arrive at Greenville well ahead of its scheduled erection time. An attempt is made to stay at least 30 days ahead of the construction schedule. With few exceptions, this schedule has been met.

Inventory control at Greenville is a problem. Fortunately, it is a problem that Penn Central is used to coping with. Most New York skyscrapers spend their gestation period in the yard —steel for at least five other major buildings is collecting there now, along with steel for several New Jersey Turnpike bridges—so the yard personnel is fully experienced.

But experience could not fully equip Penn Central's people for a project like the World Trade Center, simply because nothing so massive has been attempted until now. To handle the job they had to lay new lines and improve others, pave vast acreages for open storage and expand the inventory control system.

So far, these efforts have paid off handsomely. In spite of delays caused by strikes and a wet summer, construction is close to being on schedule.

"Greenville has been the key to the whole project," says William C. Borland, the Port of New York Authority's engineer of logistics and materials. "We could never have gotten out of the ground without it." ■

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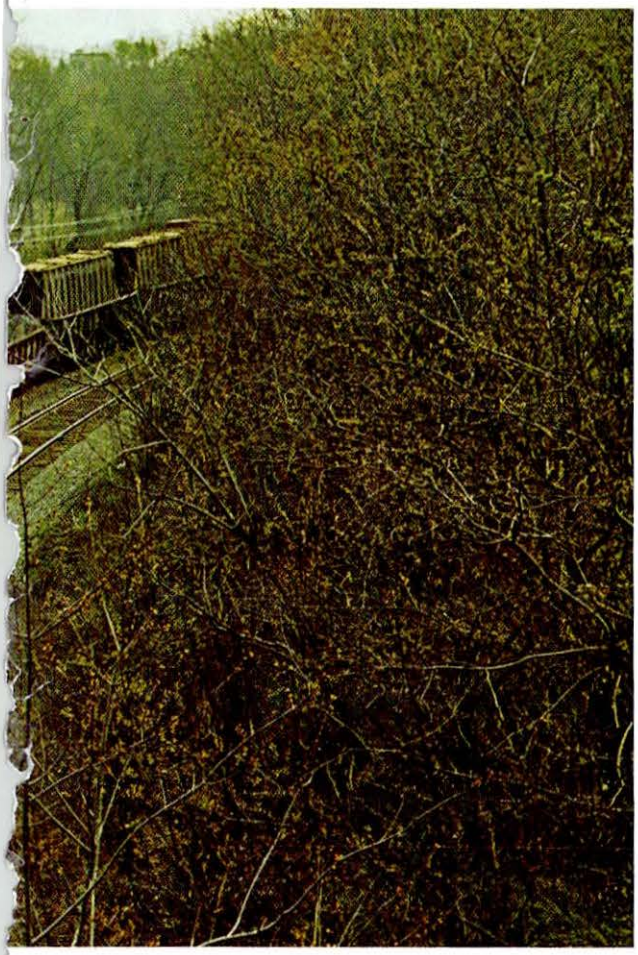

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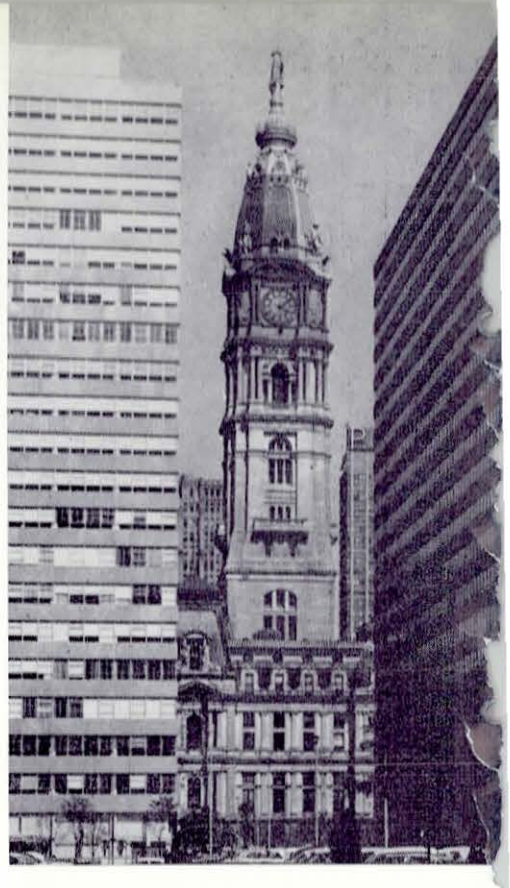
The Philadelphia story (continued)

A pioneer in commuter-railroad aid, the Philadelphia area is now planning a massive infusion of capital in mass transport.



The apparently permanent loss of some riders following the recent increase in Philadelphia subway fares has prompted the directors of the Southeastern Pennsylvania Transportation Authority to begin developing a new Master Plan for the area's transit system.

The new plan will probably be ready for review by transportation consultants before the end of the current fiscal year, according to Edward Harvey, assistant general manager of SEPTA. It is expected to supplement the Authority's $365-million, six-year capital investment plan, announced earlier this year.

SEPTA purchased the subway system from the Philadelphia Transportation Co. in October 1968 for $48 million. At the time, the fare was 25 cents. After a substantial labor settlement on January 15, 1969, it became necessary to raise the fare to 30 cents. This action led to an immediate loss of riders, some of whom have not yet returned to the lines.

Although considered to be relatively minor by the board of directors, the loss of subway riders marks the first significant reversal in the short but highly successful history of SEPTA. Chartered by the state of Pennsylvania in 1964 to improve and coordinate commuter transportation in the greater Philadelphia area, SEPTA has since its inception been doing what many detractors claimed was impossible—saving a commuter transit system. Not only saving it, but substantially improving service while showing the way toward break-even operations by the railroads.

● **The public must share costs.** SEPTA is the result of a philosophy that first developed in Philadelphia more than a decade ago. At that time the City Council realized the city was in danger of losing commuter service because the railroads were unable to carry the financial burden of providing it. Because the commuter lines were vital to the economic well being of the city, the Council appropriated $160,000 to purchase services from the Pennsylvania and Reading on two northwest lines. That was in 1958.

In 1960, the city organized the Passenger Service Improvement Corp. (PSIC) to administer the purchase of service contracts. Shortly after PSIC was founded, three of the four counties surrounding Philadelphia — Bucks, Montgomery and Chester—organized the Southeastern Pennsylvania Transportation Compact (SEPACT) to support commuter operations beyond the city limits. The two agencies merged to form SEPTA in 1964.

From the beginning, PSIC and SEPACT operated on the premise that subsidy alone was not the answer to the commuter railroad problem. They believed they had to find a way to lure the commuter back to the railroad, reversing a trend that had persisted since the end of World War II.

The first move by PSIC was a fare reduction on the two railroads' Germantown lines. Later, under SEPACT, fare reductions also were applied on the Pennsylvania Railroad's Levittown line to the northeastern suburbs and the Reading Company's Lansdale-Hatboro lines to the northwest.

The SEPACT program, incidentaly, marked the first time the Federal government had participated in a commuter railroad program. Two-thirds of the $3,116,000 cost was paid by the Federal Housing Authority.

● **Seemed wildly successful.** At first glance, both fare reduction programs seemed to be wildly successful. Ridership zoomed on the lines involved.

On sober reflection it was decided that what the fare reduction program was actually proving was that the dedicated rail commuter is a highly mobile fellow. Large numbers of them were crossing and by-passing non-supported commuter lines to get to stations offering reduced fares. Although there was some net increase in riders, the impact was not impressive.

An attempt to work with a total system began in 1964. In that year, the Reading lost money on both freight and passenger traffic. It was obvious that the company would have to get greater public financial participation in its commuter operations if it were to continue passenger service.

Both the city and the regional group recognized the validity of the Reading's claim. It was decided to put Reading's entire Philadelphia area commuter service under contract to demonstrate what could be done with a total system. An 18-month, $4.7-million program called "Operation Reading" was instituted.

This time, fares were not the only consideration. In fact, fares were increased twice during the 18 months without apparent adverse effects.

"Operation Reading" was an attempt to find all the factors that could lead to a successful commuter railroad operation. Market research was instituted to find out as much as possible about the commuter and why he did or did not use the railroad. A marketing program extolled the merits of taking the train to work or play. Service levels were tinkered with to find what was best liked by the rider and most economical for the railroad. The unions involved agreed to work rule changes that increased the productivity of the crews.

In essence, success of "Operation Reading" depended on commitments from all interested parties—the public at large, the riders, labor and management. All had to pay a share of the cost.

Although "Operation Reading" was the first major project tackled by SEPTA, and although, in the words of Edward Harvey, "We had an awful lot of ground to cover in a very short time," the results were inspiring. Ridership sometimes increased more than 5% from one month to the next. A comparison of August 1966 revenues with those during

SEPTA EXPERIENCE AND PROJECTIONS

	Fiscal Year 1965	Fiscal Year 1969	% Change	Projected 1970	1975 Projection	1969-75 % change
Annual Ridership						
SEPTA	26,394,744	33,001,040	+25.0	34,200,000	42,175,000	+27.8
Penn Central	15,420,605	19,984,091	+29.6	20,900,000	26,325,000	+31.7
Reading	10,974,139	13,016,949	+18.6	13,300,000	15,850,000	+21.7
Annual Ticket Revenue						
SEPTA	14,063.9	16,653.0	+18.4	17,488,300	25,127.2	+50.9
Penn Central	8,584.4	9,892.9	+15.2	10,331,800	15,291.9	+54.6
Reading	5,479.5	6,760.1	+23.4	7,156,500	9,835.3	+45.5
Cost of Operation						
SEPTA	24,650.3	27,035.5	9.7	28,254,300	37,022.4	+36.9
Penn Central	14,150.3	14,926.4	6.0	15,531,500	20,784.7	+39.3
Reading	10,500.0	12,109.1	14.8	12,722,800	16,237.7	+34.1
Avg. Weekday Riders						
SEPTA	105,000	127,700	+21.6	132,200	156,900	+22.9
Penn Central	63,000	78,000	+23.8	80,750	95,800	+22.8
Reading	43,000	49,700	+15.6	51,450	61,100	+22.9

the same month a year earlier showed a jump of 21.5%.

By treating all Reading lines equally with regard to fares and service, SEPTA removed the rider's incentive to by-pass his nearest station in favor of one that could offer him a better break on fare. As a result, the average length of ride rose from 12.5 miles to 13.6 miles.

● **Support expanded.** The success of the 18-month experiment with the Reading provided the impetus to put the Philadelphia area's entire 265-mile commuter network under purchase of service contracts.

The cost of doing so is not insignificant. In fiscal 1969, SEPTA paid the Penn Central $3.9 million and the Reading $4.7 million for commuter services.

To earn this money, the railroads must meet certain standards prescribed in their contracts, all designed to promote the commuters' interests. Failure to do so results in stiff penalties. Such penalties totalled approximately $80,000 in fiscal 1969, 95% of which were levied against one railroad.

The contracts establish requirements to operate on time and with sufficient equipment to meet the needs of the riders. Standards for cleanliness of cars and stations are spelled out. The railroads are responsible for prompt removal of snow from lines and parking lots. Fare schedules and pricing policies must be approved by SEPTA before they are submitted to the Public Utilities Commission.

● **Profits in sight.** In spite of the massive influx of public money, and in spite of an impressive increase in riders over the past decade, Philadelphia's commuter railroads are not returning profits to the companies. At best, SEPTA support has resulted in a standoff between profit and loss. This has given the railroads breathing time, but has not cured the malady. The basic problems still remain—old roadbeds and old equipment.

SEPTA, with the cooperation of the railroads, has plans to change these conditions.

"All we need to pass the break-even point," says Harvey, "is time and money." Our marketing studies have shown us that we'll get the riders if we can provide the right equipment and service. Our six-year projections are based on the idea that we'll be able to sell enough rail service in that time to pay for what we have to invest."

$365 million in six years

What SEPTA, together with the city of Philadelphia, believes it must invest during the next six years is about $145 million for new and improved rail facilities and another $220 million for extension and improvement of the subway system.

The rail improvements include electrification of a number of lines, a center city connection between the Reading and Penn Central commuter stations, a rail line to the airport, station and parking improvements, new communication and signal systems and 208 new commuter cars.

Currently, SEPTA is giving top priority to the procurement of 144 new commuter cars, expected to cost $42 million. Penn Central will get 130 and the Reading 14 of these cars if the request is approved by the Department of Transportation.

DOT approval is necessary because the Federal government is slated to pay half of the bill for the new cars. The state will pay a quarter of the cost of the new equipment and the remaining quarter will be apportioned among the city, counties and railroads.

The new cars are needed both as replacements for aging equipment and to expand peak hour capacity. SEPTA has been so successful in selling rail service to job holders that it has filled the existing cars to capacity during rush hours. Unless more cars can be put in service, the six-year ridership projects cannot be met.

Almost one-third of the capital investment program will come from self-sustaining funds. The balance must be obtained from local, state and Federal governments.

Local and state financing does not seem to be a problem. The Federal government, specifically the Department of Transportation, has been sitting on requests for funds for several months. When the Federal log jam breaks, SEPTA officials are certain they will be able to prove that good commuter service can return a profit. ■

BART track demands specia

New track is being built in this country every day—but not with a gauge of 5½ feet. And neither is it being built very often with prestressed concrete ties, especially if they are 9 feet long and weigh 535 pounds each. Add to these features continuous welded rail and you have a type of track that calls for special techniques of construction.

Dravo Corp. is up against this problem in its contract to build the first track for the 75-mile system under construction for the San Francisco Bay Area Rapid Transit District. Dravo's contract calls for construction of 43 route miles of double-track line. Included are 86 miles of track, plus 166 turnouts.

● **Two types of track.** The contractor has two types of track to contend with. One type is the track being built at grade. Despite its unusual features, this track is basically of rail-tie-and-ballast construction. The other type is the track being built on the concrete deck of an elevated or aerial structure. Here the rails must be fastened to the concrete deck, using a special tie plate and fastening. The mileage involved in Dravo's contract is divided about equally between the two types.

In building the track the contractor is held to close tolerances covering line and surface. Deviations in 31 feet must be held to ⅛ inch, both horizontally and vertically.

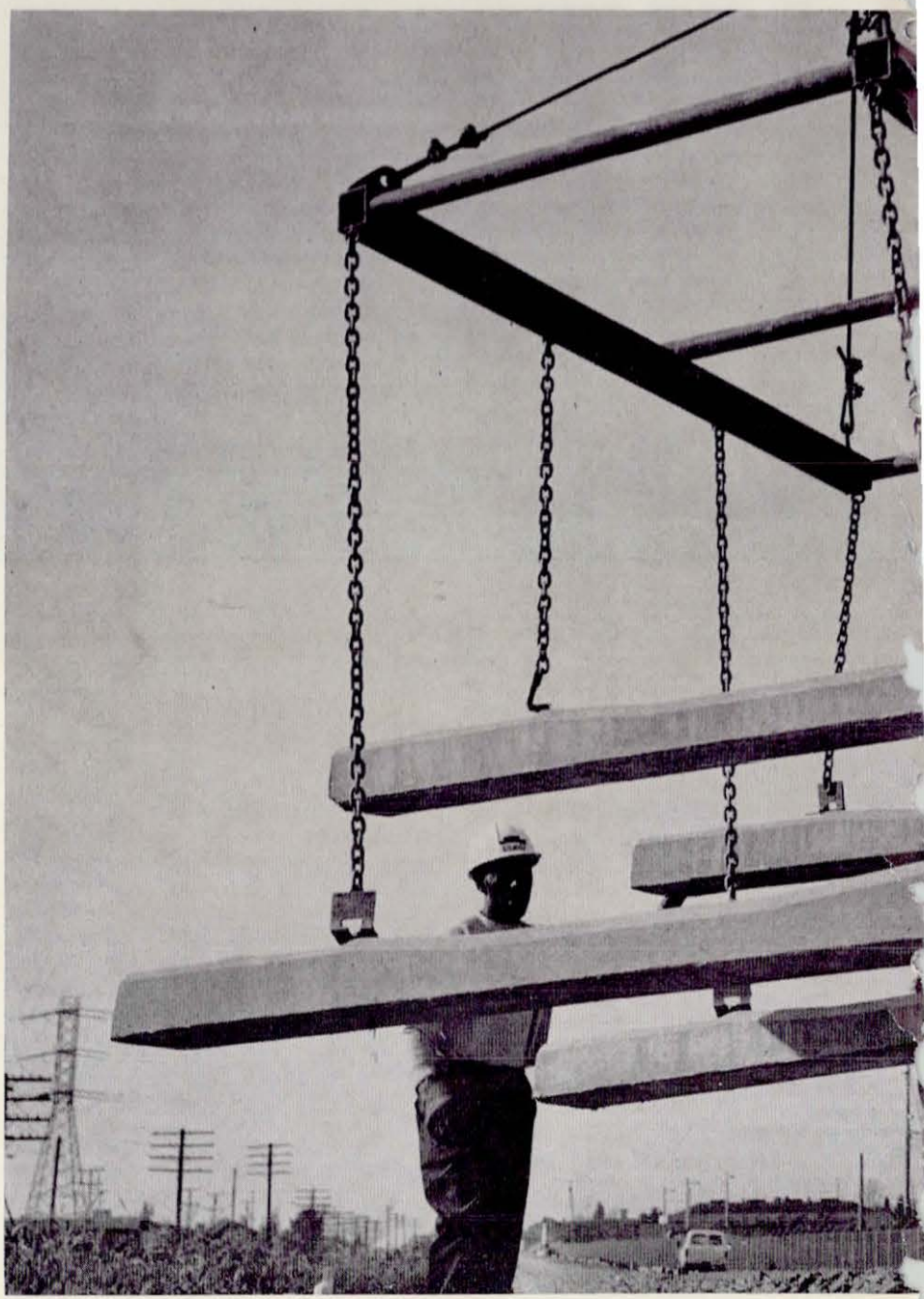
Rail for the project is the 119-pound section furnished by CF&I Steel Corp. It is being welded into 1,518-foot lengths at Southern Pacific's NCG welding plant in Tracy, Calif. The prestressed concrete ties are being manufactured by the Ben C. Gerwick Co., a subsidiary of Santa Fe International. The rails are separated from the ties by ⅛-inch rubber pads, and the rails are fastened with Rails Co. Flexiclips used in conjunction with nylon insulators. Ballast is crushed stone.

● **Ballast placed first.** In building the ballasted track the contractor chose to start with a layer of ballast eight inches thick and 10 feet wide. After the ballast had been spread it was compacted by a 9-ton vibratory roller. For placing the concrete ties on the ballast bed, the contractor used a special spreader bar handled by a tractor-type crane. This rig was designed to pick up four concrete ties and to deposit them on the roadbed at approximately the proper spacing (30 inches).

For transporting and laying the long rails, the contractor built a train from a series of single-axle bogies interspersed at intervals with four-wheel trucks needed for breaking purposes. The train was designed to carry 16 of the long lengths in a single tier. The rail train is powered by a 70-ton Baldwin locomotive which had to be streamlined somewhat to permit its movement through station areas.

For use in unloading the long rails, and also for transferring them to the rail train from the standard-gauge equipment on which they are shipped to the site, a double-drum winch was placed at one end of the rail train. The winch is used in conjunction with a device called a rabbit which, attached to the winch cable, rides on the two outside rails on the train.

When transferring long rails from standard-gauge to wide-gauge equipment, the rabbit was attached to four long rails at a time, which were then



CRAWLER CRANE, carrying four ties with the aid of a special spreader bar, moves alo

techniques

on newly placed and compacted ballast for San Francisco transit system.

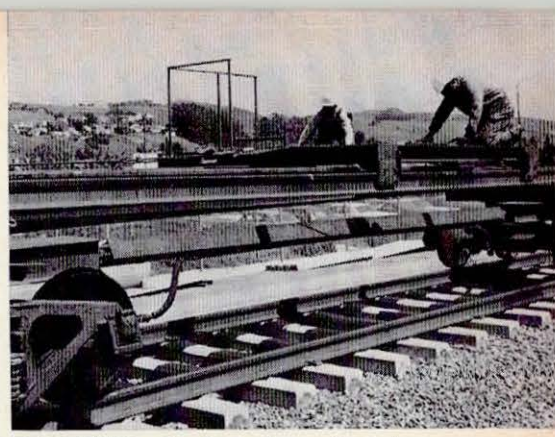
pulled onto the wide-gauge train by the winch.

Unloading the rails. In the unloading operation, two long rails at a time are forced off the head end of the train and onto the ties, being pushed out ahead of the train by the winch. This operation is facilitated by using rollers placed on the ties.

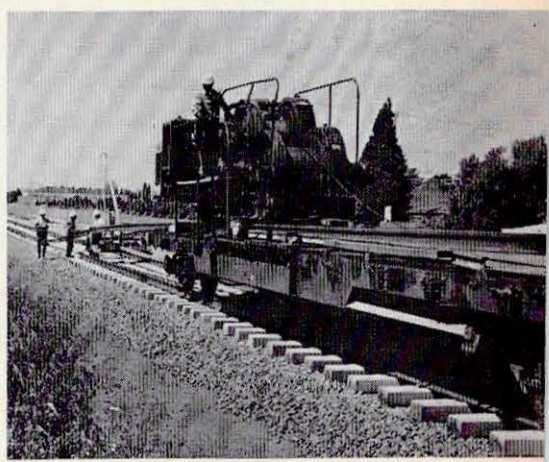
As the rails come off the rail train they are guided into position on the ties by a Pettibone Mulliken Speed Swing operating beside the track and using a special rig attached to the boom.

When first laid, the long rails are joined temporarily by standard joint bars. At this time the center 500 feet of each string is fully clipped, while the 500 feet at each end is clipped loosely, to allow movement at the ends with changes in temperature. Nuts for the clips are applied by an RMC Model CA 101 Clip Applicator.

(Continued on page 37)



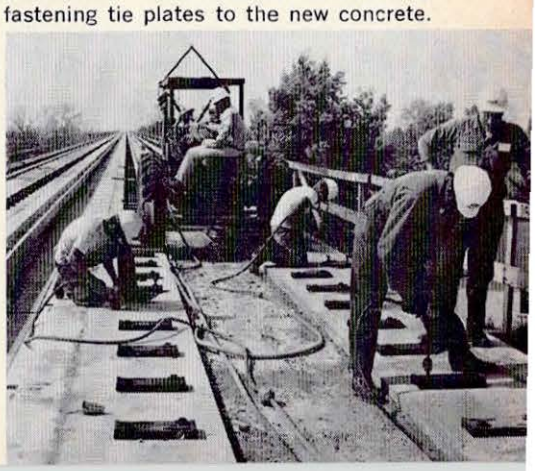
REAR ENDS of rails to be unloaded are attached to this "rabbit."

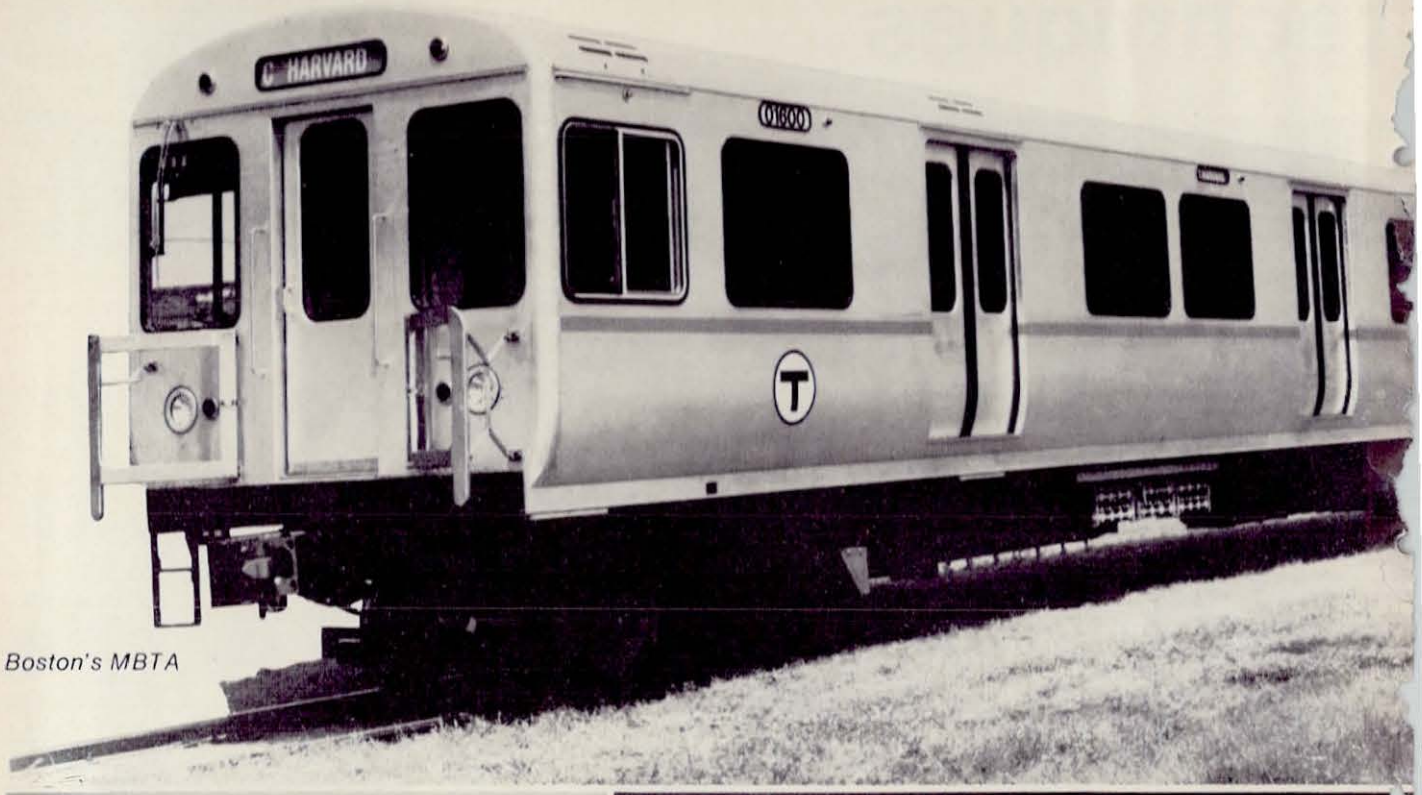


LONG RAILS are pushed off head end of rail train by the "rabbit."

SPECIAL RIG mounted in boom of Speed Swing permits rollers to be removed.

WORKMEN RUN DOWN BOLTS for fastening tie plates to the new concrete.





Boston's MBTA

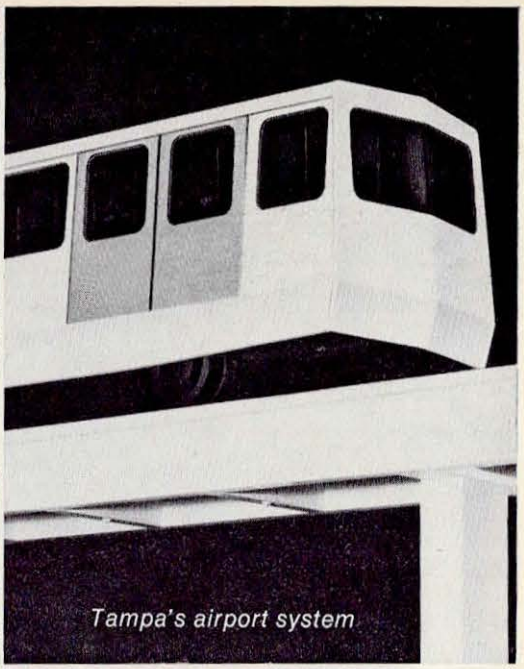
New York's PATH

United Aircraft's Turbo-train

There are seven good reasons for aluminum transit cars.

Any one of them is reason enough.

Toronto's TTC


Tampa's airport system

San Francisco's BARTD

Prototype of Washington's Metro car

Light weight, durability, beauty, corrosion resistance, low-cost maintenance, safety, and 66 years of Alcoa experience in transportation. There may be other reasons, but they hardly seem necessary. The most recent rapid-transit projects have appreciated the advantages of aluminum: New York's PATH, Boston's MBTA, San Francisco's BARTD, Toronto's TTC, Tampa's airport system, United Aircraft's Turbo-train and the prototype of Washington's Metro car. All have chosen Alcoa® aluminum for one good reason or another.

In planning and/or designing for rapid transit, think in terms of Alcoa aluminum. It gives you a lower cost initially, a greater range of finishes and forms with which to work, and it reduces maintenance costs. Taking advantage of aluminum's light weight will mean lower operating costs as well as less wear on brakes, wheels, bearings, rails and roadbeds.

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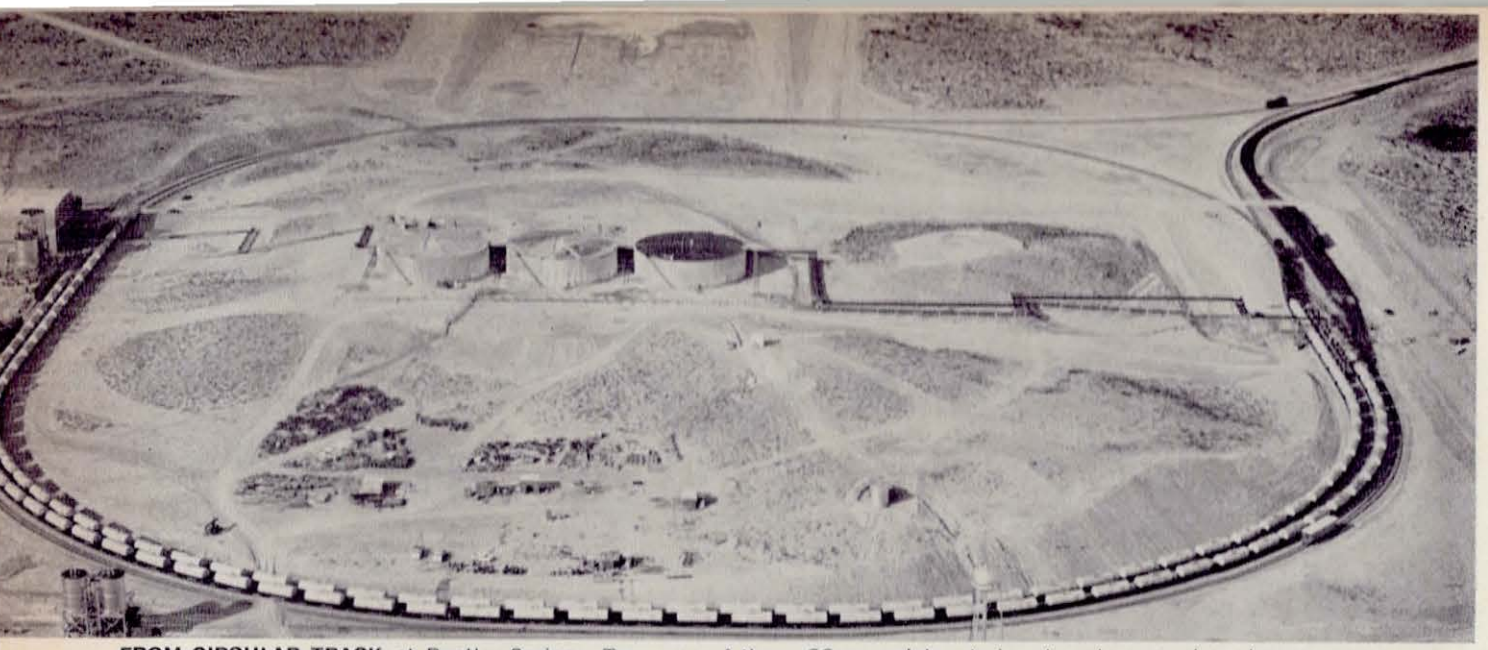
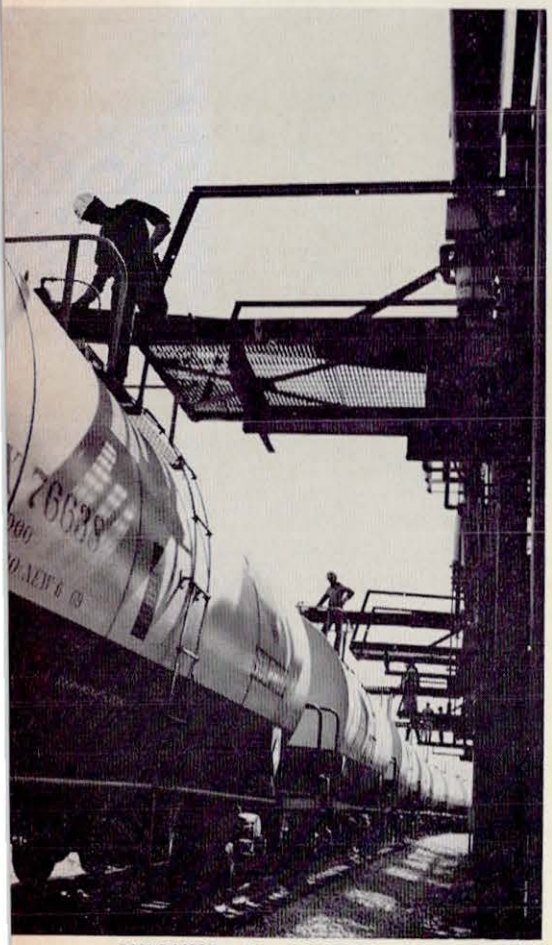
ALCOA

Circle 12 on coupon page 31



FROM CIRCULAR TRACK at Rustler Springs, Tex., one of three 66-car sulphur trains departs every two days.

Molten sulphur by the trainload



SULPHUR IS LOADED into 13,000-gallon tank cars at Duval's $50-million plant. It is transloaded at Galveston.

Duval Corp. is the shipper. Santa Fe is the carrier. For both, the stakes are substantial in this 930-mile unit-train operation.

From Rustler Springs to Galveston, the sulphur trains are rolling—each one with up to 858,000 gallons of molten sulphur for domestic use and for export.

The shipper is Duval Corp., which built a $50-million sulphur extraction plant at Rustler Springs, in a sparsely populated area of west Texas. The railroad is Santa Fe, which built a 30-mile spur to the plant site to make the 930-mile rail unit-train haul possible (RA Aug. 11, p. 24).

Santa Fe will operate three 66-car trains out of Rustler Springs, with every-other-day departures. Cars are heavily-insulated 13,000-gallon tanks. At Galveston, Duval has developed a 65-acre plant where the molten sulphur can be transloaded into barges or ocean-going ships for movement to domestic or overseas destinations and delivery to customers.

● **Traffic is substantial.** Preliminary indications are that about one million tons of sulphur will move over the route during the first full year of Duval's operation; traffic is expected to climb to 2.5 million tons by the fifth year.

Santa Fe's investment in the project is substantial.

For example, the spur to Rustler Springs was built at a cost of more than $3.5 million. In addition, Santa Fe upgraded about 18 miles of its line between Carlsbad, N.M., and Pecos, Tex., from Loving, N.M., to the point where the line to Rustler Springs takes off.

● **Fast construction.** Santa Fe engineers got the new line ready for service in less than four months after the ICC approved the start of construction. But there were problems. The line had to be built through rolling, arid country—where the occasional rains are sometimes heavy and the run-off is rapid.

In the 30 miles of new line, the Santa Fe installed 13 prestressed-concrete-type bridges and 92 corrugated metal culverts. The longest bridge, across the Delaware River, has ten 28-foot spans and two 60-foot spans. The biggest culvert is a double structure in which the barrels are 144-inch diameter.

The line is laid with 131-pound relay rail, cropped and welded into lengths ranging up to 1,610 feet. Eight-foot ties and volcanic-cinder ballast were used.

Maximum grade on the Rustler Springs line is 1.0% against loaded cars and 1.5% against empties. Although the line is not signaled, insulated joints were required for track circuits at highway crossings equipped with automatic protection.

Santa Fe is operating the unit trains via Carlsbad and Clovis, N.M., and then through Texas via Lubbock, Sweetwater, Brownwood, Killeen, Temple, Bellville, Rosenberg and Alvin to the port at Galveston. ■

Biaggini urges new look at equipment

The importance for railroads to be "doing our thing—simply providing the kind of service that will win the shippers' business," was stressed by Southern Pacific President Benjamin F. Biaggini recently. The occasion was the annual meeting of the Railroad Division of the American Society of Mechanical Engineers in Los Angeles.

While solving technical problems of providing 20th Century transportation with a physical plant rooted partly in the 19th Century, said Biaggini, engineers must also be concerned with quality control, better coordination of rail research, improvements in disseminating technical information, and new emphasis on recruitment of technical personnel. "We can no longer afford to perpetuate either equipment or methods just because they have stood the test of time," he warned.

"In the past," Biaggini continued, "railroads did much to shape the economic and social environment. The carrying capacity of freight cars, the speed of trains and the design of the once-important rail passenger service dictated how the railroads would run and, in turn, how the country would grow. Today the environment more and more is shaping the railroads."

● **Not warmed over.** Despite the railroads' tremendous inventory of equipment in varying stages of age, adaptability and utilization, observed the SP president, "we must not try to spend excessive time in warming over old ideas when we should be moving ahead with our best thinking on new concepts for future railroads. It is time to be looking at all kinds of advanced power systems—linear induction motors, air-cushion vehicles, magnetic suspension, fuel cells and electrification, from either conventional or nuclear power plants."

When Biaggini looks at existing rolling stock, he says, it calls to mind the almost daily "bitter experience with a major interruption to traffic because of the failure of one small component to perform as expected." The industry, he said, has "too many costly episodes that parallel the story of the loss of the legendary horseshoe nail . . . The time is here to put the pressure on ourselves, on our suppliers and on our sister railroads to build greater reliability into original designs and then to police continually to maintain it."

● **Equipment shortcomings.** Among the industry's shortcomings with regard to equipment, as Biaggini sees them, are:

—Willingness to accept repetitive maintenance as a routine way of life;

—A possibility that AAR procedures for evaluating new designs lead to premature acceptance;

—A proneness of carbuilders and the specialty manufacturers to push for the application of too many devices before thorough testing;

—Too little and too late interchange of information about problems when they are known to be developing.

"If we have a coupler-bypassing problem on longer freight cars," observed Biaggini, "it is inexcusably wasteful to allow thousands of cars to be placed in service with the problem unsolved. Then we have to order a crash program to capture the cars in the field and make emergency modification . . . Hasty introduction of unproved products not only causes costly failures, but the necessary corrective action drains valuable manhours which would be devoted to keeping our equipment fleets in tip-top running shape."

● **Role for all.** While decrying the billions expended by the government in transportation research, to the virtual exclusion of the rail mode, Biaggini stressed that "in the Seventies we must do much more to pool the great creative engineering talents on our railroads and among our suppliers and potential suppliers, and also involve government resources." The goal is a well-directed, industrywide research effort which will truly be in the national interest.

While the industry seeks "deserved greater Federal commitment to railroad R&D," railroads and suppliers can now "be more resourceful with what they themselves can afford to put into this vital effort," according to the SP president. He pointed to the task force approach used to solve European rail problems through the Office of Research and Experiments of the International Union of Railways (UIC). SP representatives have studied overseas developments first hand and feel that "American railroaders should be doing more to see what is being accomplished abroad." Developments there should not be labeled "not invented here" and automatically discarded as unworthy of attention in North America.

● **Inadequate for future.** Biaggini cited overseas developments in freight car running gear and warned that "we

"We should be moving ahead with our best thinking on new concepts for future railroads."

—SP President B. F. Biaggini

FRANK MALONE

WATCHING WASHINGTON

WHO LOBBIES FOR FRA? Nobody, apparently, except FRA itself. And it looks as though Reg Whitman, FRA administrator, could have used some help in his recent plea before the House Appropriations Committee. He asked for more money for more men to help tell the rail story within the Government, a job given FRA by Congress itself. But the House has passed a money bill that would give FRA a total of zero more men in fiscal 1970 than it had in fiscal 1969. Senate concurrence was expected (p. 8).

THE REASON FOR THE SNUB is given in the same Committee report that rejects the plea: "The Committee again calls attention to the lack of authority vested in the Federal Railroad Administration to deal with the many problems of our railroads. Until legislation is enacted expanding this administration's existing authorities, it is not likely that it will be able to make any substantial progress in coping with these problems."

THAT MAY COME AS A SURPRISE to those who thought FRA got the power it needed when it was created in 1967 along with the Transportation Department. People forget that FRA really *was* created, from nothing. The Highway and Aviation administrations, however, already were in good shape and merely had to be brought under the DOT flag. And highway and aviation suppliers already were well versed in lobbying not only for their immediate interests, but also for their intra-Government representatives.

ALL FRA WAS ASKING FOR was roughly 20 more professionals, such as analysts and technicians. They would have gone mainly into the Office of Policy and Program Analysis, the critical part of FRA, charged with drafting a reasonable Federal policy on railroads. All FRA was asking for was help in filling its role as a rail advocate.

FRA WILL HAVE TO STRUGGLE ON with a huge total of 305 people, secretarial staff included (FRA also has 771 persons in Alaska running the Federally-owned Alaska Railroad). Compared with Highways (3,543) and Aviation (22,000), both of which will get more, 305 is pretty small. What kind of approach to the Government-endorsed pursuit of *balanced* transport is that? Within DOT, FRA is a village. In fact, 305 is roughly the population of Dedham, Iowa. And it seems that within DOT, FRA will keep on looking like Dedham does within the Iowa state structure —like a place barely large enough to be on the map.

should be looking at them as we study the dynamic performance of our own freight-car truck to see if we can improve the riding quality, reduce lading damage and cut wear and tear on its parts." While saying that the American truck is "simple, rugged, interchangeable, and has served us well," he sees indications that "it may not be measuring up even to some present operating conditions and certainly will not be adequate for all future demands."

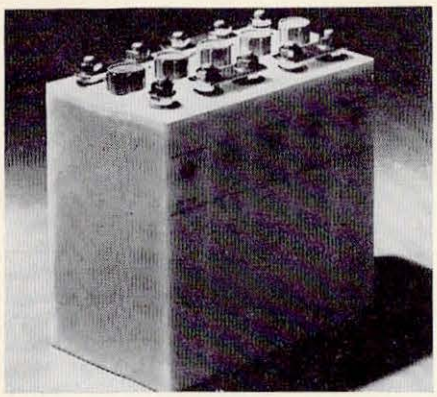
"You engineers," he charged, "are the ones to lead us in taking these looks into our future 10 and 25 years from now, even while you are shaping up next year's budget and figuring out how you are going to handle the short-range necessities . . . Railroad design engineers will be called upon for more design innovations in rail equipment—not only for the handling of all-rail movements but for the handling of intermodal shipments by methods with the highest degree of compatibility. This suggests many opportunities for creative work that puts first priority on customer service."

● **Engineers' accomplishments.** The integration of rail equipment into new handling concepts was discussed during one technical session. Included were the Seaboard Coast Line's flip-top cars for Florida phosphate service (RA, Sept. 23, 1968, p. 45), American Steel Foundries' concept for articulated container cars (RA, March 31, p. 48) and investigations of hopper cars by the Bessemer & Lake Erie.

Today's heavier and faster trains are putting increasing loads on braking systems. Another ASME session was devoted to this subject. David G. Blaine, district engineer for Westinghouse Air Brake, pointed out the factors essential in establishing downgrade tonnage ratings for freight trains. "Safe train handling on grades," he explained, "requires adequate reserves of retarding force . . . Practical capacities of air and dynamic brakes to absorb kinetic energy must be understood by operating, as well as by mechanical department, personnel."

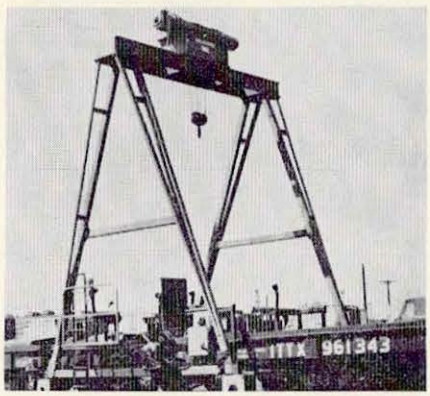
G. J. Sennhauser, superintendent of Reserve Mining's Railroad Department, discussed the conversion of Reserve's 990 ore cars to high-friction composition brake shoes. The clasp-brake system could be removed from the cars' trucks when metal shoes were displaced. This meant a considerable reduction in car weight and maintenance, an increase in wheel life, and less shoe sparking in the heavily wooded territory through which the ore trains operate. "Brake shoe cost is a standoff," Sennhauser noted. "Although the high friction shoes cost approximately twice that of conventional cast-iron shoes, only half the number are required." ■

NEW PRODUCTS REPORT



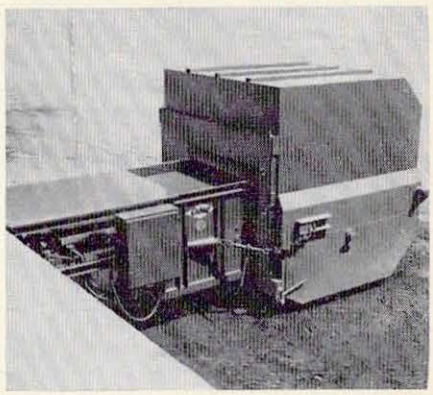
Nickel-cadmium battery (RA-1)

Because of its low internal resistance, the HFP nickel cadmium battery is said to be more efficient at extreme discharge rates than any industrial battery yet developed. Initially, it will be available in sizes to 100 amp hr, with first uses expected to be in switchgear control. The first batteries will generally be 28- and 125-volt units. Sizes over 100 amp hr will be available early in 1970 for engine-cranking service. *Nife Inc.*



Hoists (RA-2)

The new A-Frame hoists added to the Page & Page line of handling equipment and now delivered to, or on order for, several railroads, have capacities of 5,000 to 20,000 lb. They are track or rubber-tired mounted and self-propelled with a 1-hp, 60-cycle, 3-phase gear motor with automatic brake. Frame, of welded and bolted construction, carries a 10-hp, single-speed lift which travels at 12 fpm. Hoists travel at approximately 25 fpm. *Page & Page.*



Waste handler (RA-3)

A new stationary packer for handling waste materials in the warehouses and terminals of the transportation industry is called Cobey Model SP-10. The unit can handle up to 125 cubic yards per hour. The SP-10 is completely self-contained. It is installed by adjusting the heights of its four legs and attaching the main power supply to a waterproof electric circuit box mounted on the outside of the unit for accessibility. *Perfection-Cobey Co.*

Repeater housing (RA-4)

A new line of completely wired, outdoor B310 repeater housings with solid-state repeaters, cable protectors and pressurized stubs is available for use with "T1" PCM cable carrier equipment. The B310 repeater housings come in 8- and 24-repeater capacities and are adaptable to one- or two-cable operations. All housings are pressurized.

The housing base casting is corrosion-resistant aluminum as is the housing mounted bracket. The aluminum repeater shelf is hinged for simple access.

Standard cable length is 25 ft for all housings. The two-stub housings permit "spatial frogging"—the technique of system connection which minimizes crosstalk. With all inputs in one stub and outputs in the other, levels are balanced and noise is reduced.

When the Lynch B310 repeater housings are used with exceptionally long span lines, provisions have been made in each housing for mounting a plug-in voice frequency amplifier. The amplifier extends the range of the fault locating pairs. Repeat coils and simplex assemblies provide the power to the amplifiers. *Lynch Communication Systems Inc.*

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Frisco

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PEOPLE IN THE NEWS

CHICAGO & NORTH WESTERN.—Albert J. Natick appointed general rates manager-food products. He was formerly director of government-industry relations, **Libby, McNeill & Libby.**

J. L. Larson named assistant superintendent—transportation, Chicago. **H. O. Tell** appointed operations liaison officer, Chicago. Because of a printer's error in RA, Nov. 17, p. 52, Mr. Larson's title was incorrectly given.

FRISCO. — C. A. Peebles, assistant chief engineer, Springfield, Mo., named assistant chief engineer-control there. **G. E. Warfel,** division engineer, Eastern division, appointed assistant chief engineer-maintenance, with headquarters continuing in Springfield. Mr. Warfel's successor is **R. N. Schmidt,** engineer track and structures, Springfield. **T. M. Adams,** engineer track and structures, Tulsa, Okla., replaces Mr. Schmidt, and in turn is replaced by **R. P. Wiese,** roadmaster, Sherman Tex.

IOWA TERMINAL.—Wendell J. Dillinger elected president, Mason City, Iowa, succeeding **C. F. Beck,** who has resigned from that position but will remain as secretary and general counsel. Mr. Dillinger has had more than 11 years of transportation experience.

SOUTHERN.—Frank L. Barton, assistant vice president Washington, D.C., promoted to assistant to the president. **James A. Bistline,** general counsel appointed assistant vice president and general counsel. **Arnold B. McKinnon,** senior general solicitor named assistant vice president—law.

SOUTHERN FREIGHT ASSOCIATION.—R. M. Barnett, assistant to the chairman, Atlanta, Ga., retired Nov. 15, after more than 50 years of railroad service.

TRANSIT

Imants M. Kaupe, Elwyn I. King and **J. Andrew Schuchardt** have been named associates, **Parsons, Brinckerhoff, Quade & Douglas.** Messrs. Kaupe and King have headquarters in San Francisco and are involved in the design of the **Bay Area Rapid Transit System.** Mr. Schuchardt has headquarters in Honolulu and is in charge of transportation and highway projects in Hawaii.

OBITUARY

Walter O. Hahne, eastern sales manager, Railway Products Department, **Exide Power Systems Division** of **ESB Incorporated** New York, died Nov. 14 in Philadelphia.

Allen A. Ische, 67, retired assistant general adjuster, **Milwaukee,** died Nov. 14 at his home in New Berlin, Wis.

Goodrich Q. Lewis, 82, retired vice president for engineering, **W. H. Miner, Inc.,** died Nov. 20 in Presbyterian-St. Luke's Hospital, Chicago.

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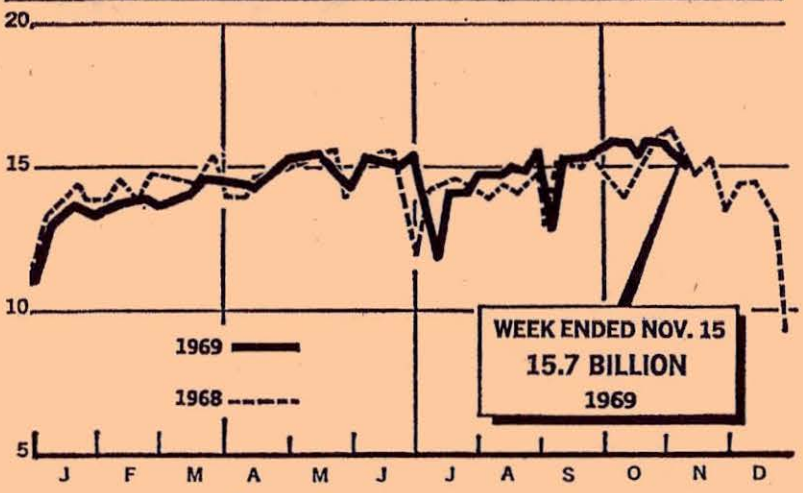
RA-12/69

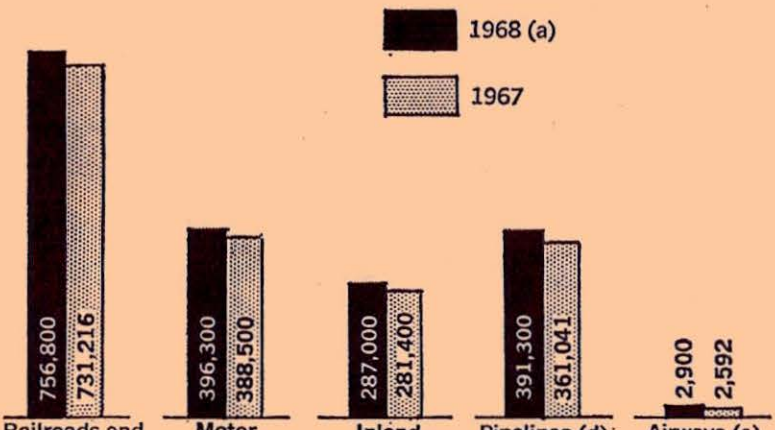
RAIL FREIGHT TRAFFIC TRENDS

BILLION TON-MILES (Estimated)



Source: Association of American Railroads

INTERCITY TON-MILES, PUBLIC AND PRIVATE*

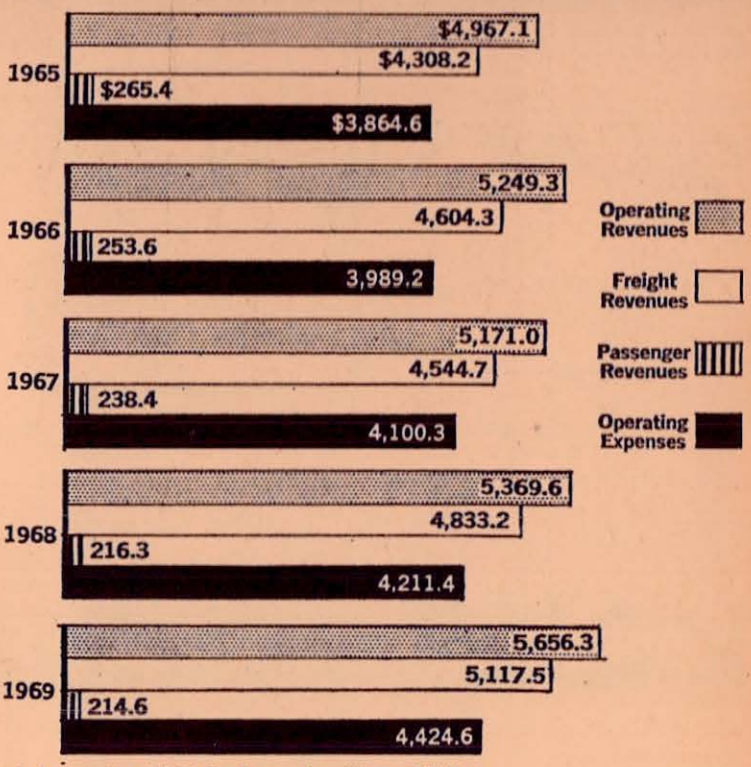


*Totals in millions. a—Preliminary. b—Including express and mail. c—Including Great Lakes. d—Oil. e—Domestic revenue, including express, excess baggage and mail.
Source: Bureau of Accounts, ICC.

Current Statistics

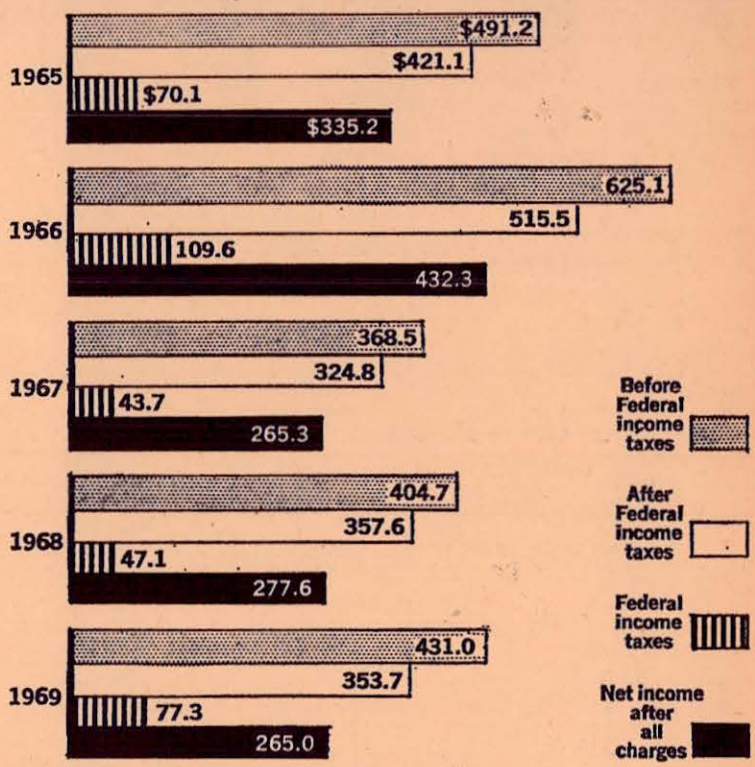
Net Income, Class I roads	
Nine months, 1969	$372,000,000
Nine months, 1968	388,000,000
New freight cars on order	
Oct. 1, 1969	45,133
Oct. 1, 1968	16,124
New freight cars delivered	
9 mos., 1969	50,060
9 mos., 1968	43,066
Serviceable cars	
Oct. 1, 1969	1,361,374
Oct. 1, 1968	1,386,742

OPERATING REVENUES AND EXPENSES*
(Class I line-haul railroads)



*First six months of 1965-69. Figures in millions of dollars.
Source: Bureau of Accounts, ICC.

CLASS I LINE-HAUL RAILROAD INCOME*



*First six months of 1965-69. Figures in millions of dollars.
Source: Bureau of Accounts, ICC.

MARKET OUTLOOK

CARLOADINGS

Loadings of revenue freight in the week ended Nov. 22 were not available as this issue of Railway Age went to press.

REVENUE FREIGHT CARLOADINGS

Commodity	Nov. 15 week	Preceding week	Per cent change
Grain	32,345	30,089	+ 7.5
Farm products	26,942	25,751	+ 4.6
Metallic ores	42,612	42,982	— 0.9
Coal	96,379	106,406	— 9.4
Crushed stone, gravel & sand	30,920	31,969	— 3.3
Nonmetallic minerals	10,189	10,550	— 3.4
Grain mill products	21,641	21,352	+ 1.4
Food & kindred products	26,162	26,418	— 1.0
Primary forest products	24,718	24,075	+ 2.7
Lumber & wood products (except furniture)	15,751	15,972	— 1.4
Pulp, paper & allied products	25,491	25,542	— 0.2
Chemicals & allied products	28,332	27,446	+ 3.2
Petroleum products	11,252	11,747	— 4.2
Stone, clay & glass products	21,260	20,953	+ 1.5
Coke	9,612	9,294	+ 3.4
Metals & products	27,822	27,056	+ 2.8
Motor vehicles & equipment	25,690	26,095	— 1.6
Waste & scrap materials	15,620	15,604	+ 0.1
Forwarder & shipper assn. traffic	8,063	8,343	— 3.4
All other carloads	70,566	71,770	— 1.7
LCL traffic	1,734	1,856	— 6.6
Total cars loaded	573,101	581,270	— 1.4

CUMULATIVE TOTAL, 46 WEEKS	1969	1968	1967
	25,171,390	25,179,988	25,046,013

PIGGYBACK CARLOADINGS

U. S. piggyback loadings for the week ended Nov. 15 totaled 27,123 cars, carrying 44,871 trailers, compared with 26,604 cars, carrying 43,503 trailers, in the corresponding 1968 week. Loadings for 1969 up to Nov. 15 totaled 1,199,003 cars, carrying 1,975,750 trailers, compared with 1,191,909 cars, carrying 1,942,419 trailers, in the corresponding period of 1968.

IN CANADA

Cumulative	Revenue Cars Loaded	Total cars Rec'd from Connections
Oct. 31, 1969	3,018,622	1,013,552
Oct. 31, 1968	3,143,113	1,028,409

FREIGHT-TRAIN CARS

● *Louisville & Nashville.*—Directors have authorized the purchase of 60 new locomotives (see below) and 2,350 freight cars costing a total of approximately $47 million. Cars to be purchased include 1,350 open-top hoppers and 1,000 box cars. These are in addition to 1,794 new cars (including 585 coal hoppers), authorized earlier by the L&N board and make a total of more than 5,400 new and rebuilt freight cars to be added to the fleet by the end of 1970. William H. Kendall, L&N president, says the road's hopper car fleet is being enlarged to accommodate the increased tonnages of coal the company expects to haul next year. The box cars will augment the L&N fleet of rolling stock needed to move freight originating on line which, according to Kendall, is expected to be about 4% higher in 1970 than it was in 1969.

LOCOMOTIVES

● *Louisville & Nashville.*—Directors have authorized the purchase of 60 diesel-electric locomotives. Included will be 50 road locomotives for hauling through freight trains (nearly one-quarter of which will be required to handle anticipated new business), and 10 switchers for yard operations.

TRANSIT

● *Massachusetts Bay Transportation Authority.*—Has signed an agreement with the Penn Central to purchase about 24 acres of land in PC's Dover Street Yards for $7 million. A rapid transit repair shop and storage facility will be constructed on the land. The facility will handle inspection, component replacement, major overhaul and heavy damage repair. MBTA also has awarded a $717,000 contract to L. H. McIsaac Co. of Allston, Mass., for complete modernization of its Kenmore Station. The station is the 13th and last to receive major treatment in the Authority's $9-million federally-aided program. The Kenmore project is expected to be completed next October.

● *Toronto.*—Transit Commission has awarded a contract to build 290 feet of subway box structure and three pedestrian passageways to Dineen Construction, Ltd., the lowest of five bidders, at $1,474,570, as part of the Yonge Subway northern extension. Contracts for special trackwork for crossovers at four stations were awarded to Abex Industries of Canada, Ltd. ($181,600) and Marubeni-Iida (Canada), Ltd. ($274,264).

SPECIAL

● *Elkan, Ltd.*—Will acquire 250 20-ft containers from the newly-formed Container Marine division of Rail-Trailer Co. in a leasing deal arranged through the Amerind Shipping Corp., New York. The steamship line operates between the U.S. and South America.

Boom not gloom seen by Claytor for railroads

For the gloom prophets there is this word from Southern's president, W. Graham Claytor, Jr.: Railroads will not merely hold their share of the intercity freight market, railroads will enlarge that share. "In spite of our admitted problems, in spite of strong competition from other modes, and in spite of all the pot shots being taken at us from various governmental and financial quarters, the railroads of this country are on the move, are working together as they never have before to solve their common problems and not merely complain about them, and as a result, railroads are going to be a greater not a lesser factor in transportation in the great decade of the seventies," Claytor says. Southern itself in the last two years increased its car fleet by 20%, with an investment of $127 million in new and rebuilt equipment, Claytor says. And to guide the use of that equipment, Southern has put $50 million into microwave.

Educational program set up by Chicago roads

Classes have begun in an educational program for railway employees which has the backing of seven Chicago-area railroads and of rail labor organizations. Up to 2,000 employees are expected to participate in the program, which will be operated by the Board for Fundamental Education under a $1-million grant from the Department of Health, Education and Welfare. Free education will be offered in four categories—1st to 4th grade level, 4th to 8th grade, special math and/or English courses, and a general education and development program which can lead to a high school diploma. Participating railroads are Belt Railway of Chicago, Burlington, Chesapeake & Ohio/Baltimore & Ohio, Illinois Central, Indiana Harbor Belt, Penn Central and Santa Fe.

EL puts Santa Fe cars into service

The first train of passenger cars purchased from the Santa Fe and completely renovated for use on the Erie Lackawanna went into service last week. The seven stainless steel coaches are the first modern commuter cars received by the EL in 35 years. They are among a total of 26 bought from the Santa Fe for service on the EL by the Commuter Operating Agency of the New Jersey Department of Transportation.

Burlington plans fare increases, schedule changes

Burlington is asking the Illinois Commerce Commission for permission to boost commuter fares, effective Jan. 1. Increases would average out at about 5%. At the same time, the road is planning commuter-train schedule revisions which will provide increased express service for long-haul commuters. A passenger survey, Burlington says, indicates that about 80% of rush-hour commuters use far-western Chicago suburban stations.

ICC approves rate reduction for canned goods

The ICC has approved a rail plan that would improve the competitive position of Pacific Coast canners in marketing their products east of the Rockies. ICC will allow rails to reduce their rates on multiple-car shipments of canned goods to Eastern points. ICC has decided the multiple-car rates (also called proportional rates) would not discriminate against single-car shippers. To benefit, a shipper must move a minimum one million pounds in a maximum of eight cars and provide complete unloading. Loading and unloading must be done in 24 hours. Stops for partial loading or unloading are out.

McGlashan named president of editors' group

Bessemer & Lake Erie's James E. McGlashan is the new president of the Association of Railroad Editors. Elected with McGlashan at ARE's annual meeting in Denver were: Vice presidents, Rock Island's Edward J. Wojtas and Santa Fe's Sheldon Butler; and secretary-treasurer, A. C. Hanson, of Duluth, Missabe & Iron Range.

BART track uses special techniques

(Continued from page 25)

Thermit butt-welds furnished by Thermex Metallurgical, Inc., are used to join the long strings. In providing the ⅝-inch gap required when making the welds, a Simplex Rail Puller-Expander is used to close or widen the gap as necessary.

After ballast has been distributed the track is raised, leveled, tamped and lined by a Matisa Model BNRI-80 machine. This unit first gives the track a raise of 3 to 3½ inches, which is followed by a final raise of ½ inch to 1 inch. A precision telescope in the hands of an operator working ahead of the tamper is used in meeting the specifications for line and surface.

● **On the concrete structure.** The problem of satisfying the specifications applying to line and surface was entirely different when working on the aerial structure previously constructed. Here, a second pour of concrete had to be made to provide a concrete leveling bed at the precise height required for supporting the rails on the special tie plates. Each of these consists of a laminated steel-and-rubber sandwich—two steel plates with a thickness of rubber between them. The plates are fastened to the concrete by bolts screwed into epoxy-coated inserts embedded in the concrete. Slots are provided in the top sides of the pads for receiving a special clip fastener. The combination pad and fastener is being supplied by the Landis Sales Co., Los Altos, Calif.

In making the second pour the contractor developed an aluminum form built in sections 12 feet long. Weight of each section is 96 pounds. One of the unusual aspects of the job will be placing the second-pour concrete through the 3.6-mile-long Berkeley Hills tunnel.

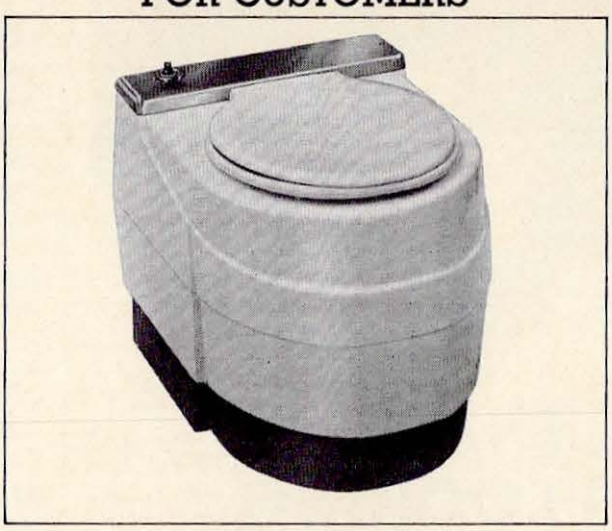
Parsons-Brinckerhoff-Tudor-Bechtel designed the entire BART system and are over-seeing the construction. Said Leslie Irvin, PBTB's manager of engineering:

"We are shoving a lot of new ideas into this project and in a number of ways working way out ahead of contemporary railroading experience. However, there is a lot at stake so we have pushed ourselves as far as we can designwise, and are requiring the contractor, too, to meet some rather unusual standards."

The combination of untried techniques and unusually close inspection is not permitting any relaxation on the part of the contractor. As Marvin Hixson, project manager for Dravo, put it: "This is going to be a tough job right down to the last day." ■

REWARD

FOR CUSTOMERS



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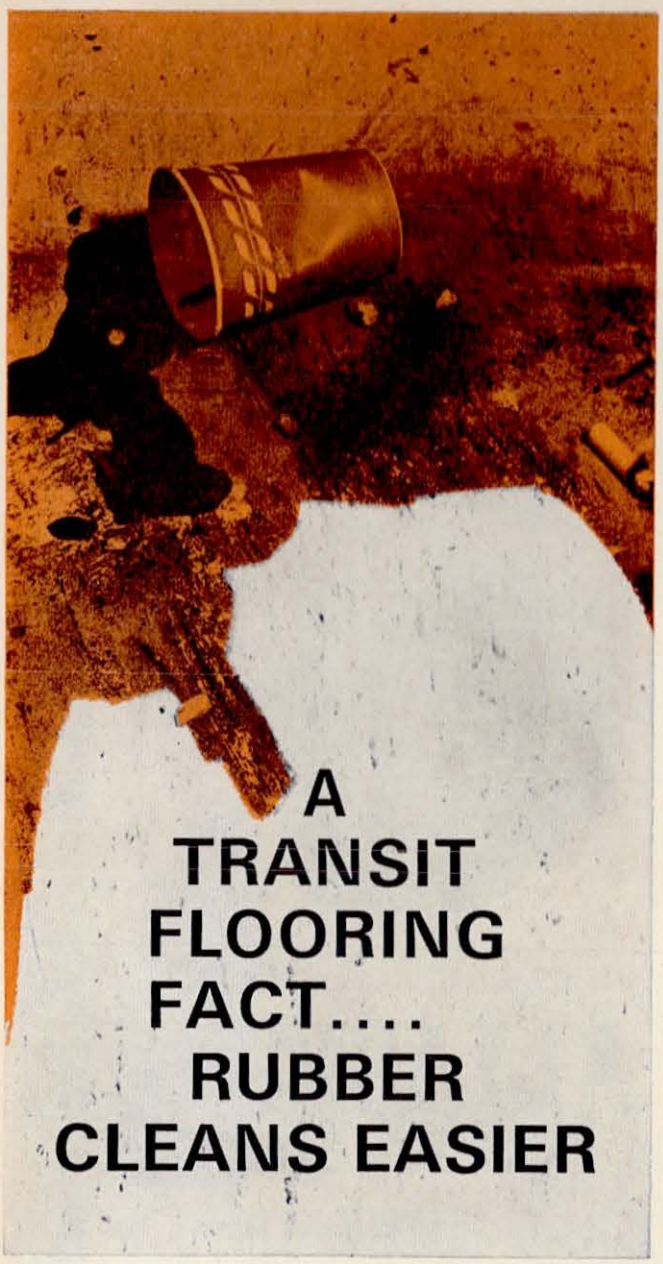

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TRANSIT ROUNDUP

DIG WE MUST: With the underwater detonation of dynamite on Nov. 24 New York began construction of its 63rd Street tunnel. Thus began one of the most ambitious transit expansion plans conceived in this country (RA, July 7, p. 15). The $69.48-million contract was awarded to a joint venture group consisting of Peter Kiewit Sons of Omaha, Neb.; Morrison-Knudsen Co. of Boise, Idaho; and Slatter Associates of Maspeth, Queens, N.Y. Peter Kiewit Sons has worked on the sinking of prefabricated tubes under San Francisco Bay for BART.

CBC TUNES IN CLEVELAND: Montreal is planning its second airport—27 miles from the heart of the city. To emphasize the importance of good ground transportation in connection with air transportation, the Canadian Broadcasting Company recently paid a visit to Cleveland and photographed its airport rapid transit extension. The film was scheduled to appear on Canadian television last week.

DOT FOR OHIO? Ohio State Representative Frederick N. Young plans to co-sponsor a bill with Rep. Roger W. Tracey, Jr., in next year's legislative session to create a state Department of Transportation. The department would tie together all forms of transportation, including inter-urban, air, rail, highway and mass transit.

ATA AWARD FOR PATH DIVISION: The Gold Certificate for Safety of the American Transit Association has been awarded to the Car Equipment Division of the Port Authority Trans-Hudson (PATH). The Division's 225 employees have compiled one million hours without a disabling injury.

READING AIDS SEPTA IN IMPROVEMENTS: A $250,000 special improvement program is being undertaken by Reading under its purchase-of-service contract with the Southeastern Pennsylvania Transportation Authority. Part of the program includes renovating about 25 commuter cars at the rate of one every 10 working days. Also in the program is the repainting of Temple University station and the Reading Terminal waiting room, the expansion and paving of a number of passenger station parking lots and improved lighting.

VILLARREAL QUESTIONS PITTSBURGH SKYBUS: Bearing out the prophecy of County Commissioner William R. Hunt, Carlos Villarreal, UMTA administrator, has some questions about an $8.7 million application for Pittsburgh's controversial Skybus. "Our technicians in UMTA have determined that there are several technical discrepancies," noted Villarreal. "Until these are rectified, we cannot proceed with a grant." The discrepancies referred to include design and operation of a switch, proof of climbing and turn capabilities, and safety factors. Besides holding up funds, Villarreal said he was not convinced the people of the county have settled on the Skybus plan as the solution to mass transit problems. The Skybus is a combination of rubber-tired, unattended vehicles and exclusive bus-only lanes, proposed by Westinghouse Electric Corp. The alternate proposal, a steel rail system, was proposed by Westinghouse Air Brake Co. **—Philip Harrison**

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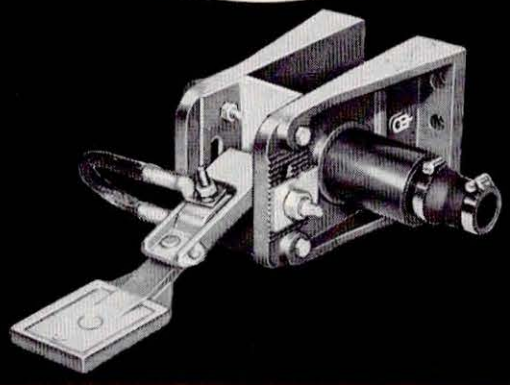

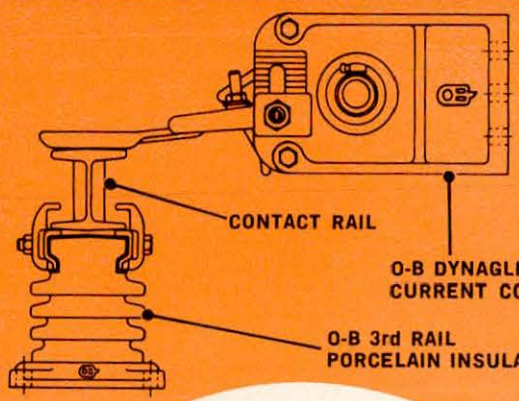

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VIEWPOINT

TAA takes a stand on train-offs

Is the railroad passenger-service "problem" strictly a railroad problem? Does it involve a battle which the railroad industry will have to fight alone? Or is there a common ground on which railroads can find allies?

The answers are, of course, "No," "No," and "Yes." And nowhere does this become more evident than in a statement to the House Subcommittee on Transportation and Aeronautics by Harold F. Hammond, president of the Transportation Association of America.

TAA has been in business for almost 25 years, as a group representing transportation users, transportation investors and tranportation companies. It is not a noise-maker, as associations or trade groups go. It is not a lobbyist, except in a broad sense.

TAA's position is one of "strong opposition" to any substantive changes in Section 13a—the so-called train-off section— of the Interstate Commerce Act which would prevent railroads from getting relief from the financial burdens involved in operating under-utilized and, therefore, deficit-producing passenger trains.

As TAA points out, if railroads are not able to obtain this relief from passenger losses, they must try to recoup "through adjustments in freight rates in a highly competitive market. . . . What can't be recouped must be absorbed by rail investors in the form of inadequate returns on investment. As a result, both shippers and investors look elsewhere for transportation services and investment opportunities. The real loser in the end is the general public, through poorer overall railroad service."

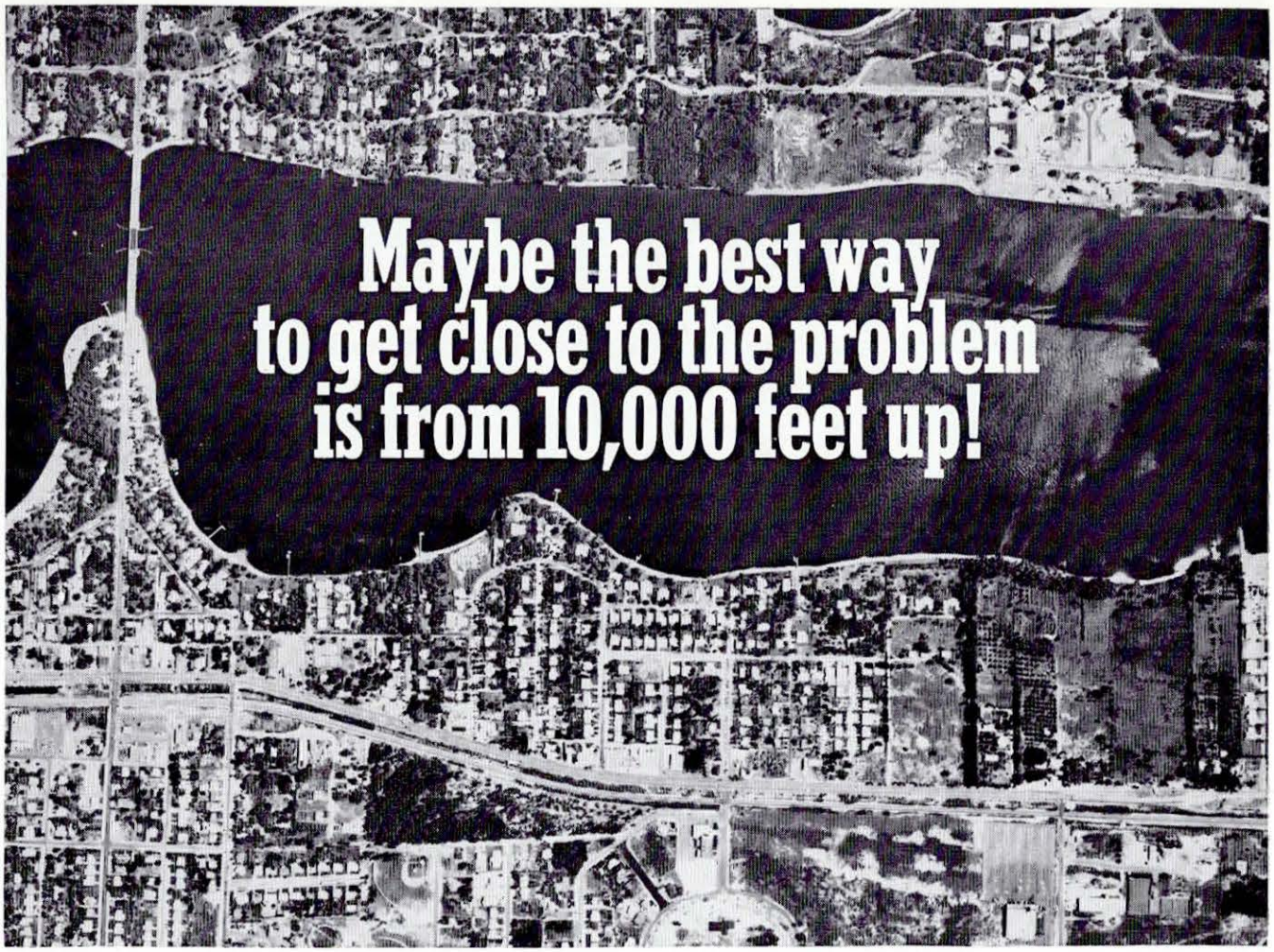
TAA regards Section 13a as constructive legislation. Its application since 1958, TAA President Hammond points out, has permitted railroads considerable financial relief. It has reduced pressures for higher rail freight rates. And it has "stimulated federal, state and local action on remedial measures in this serious transport problem area."

To too great an extent, rail passenger service has become a political plaything. Political capital is easily made by elected officials who mount "save the train" campaigns—regardless of the fact that they may be costing their constituents money in the form of higher freight rates and, consequently, higher prices on the wholesale and retail markets.

EVERY TRAIN CAN'T BE A WINNER

Perhaps it was a great thing, that the Department of Transportation and Penn Central received a special award from the Railway Progress Institute a few days ago for the cooperative DOT/PC Metroliner project. At this point, Metroliner looks like a good thing—something which can perhaps be extended into other corridors of high-volume travel. At the same time, industry-watchers had to suppress a shudder —knowing full well that there will be those who will try to make every train a Metroliner, every train a winner no matter what the figures show.

The facts are that the passenger train—the traditional, long-haul, slow-trip-to-anywhere passenger train—is a dying (if not dead) institution. The railroads' voice—and TAA's—should be heeded.



Maybe the best way to get close to the problem is from 10,000 feet up!

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Aerial photography has many other uses as well. City planners really see all of their city, often for the first time—at a glance. Oil companies see where to drill—exactly. Strip miners calculate exact tonnage removed without weighing anything. Utility companies inspect extensive rights-of-way, yet never leave the office. The list goes on and on.

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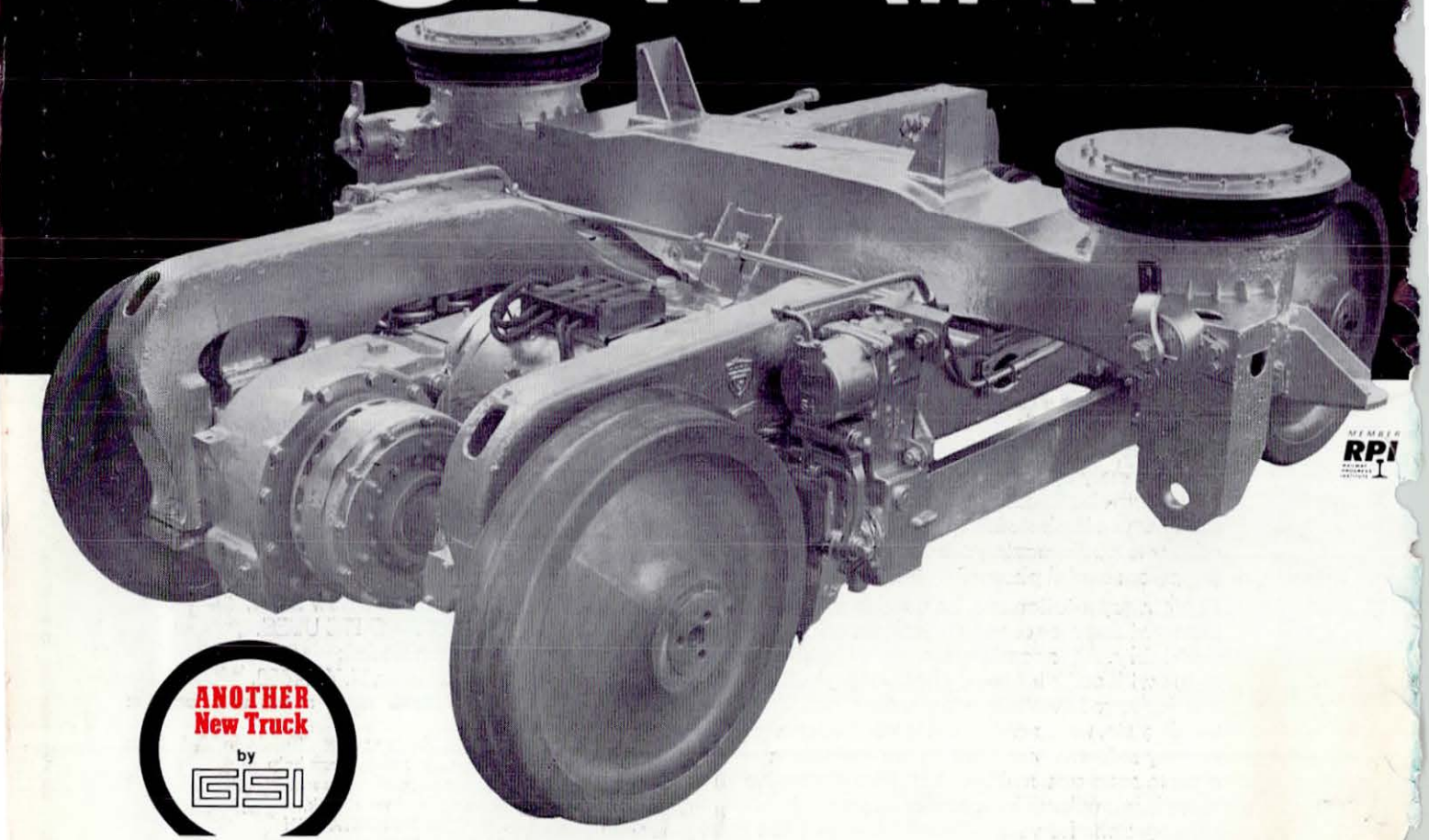

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